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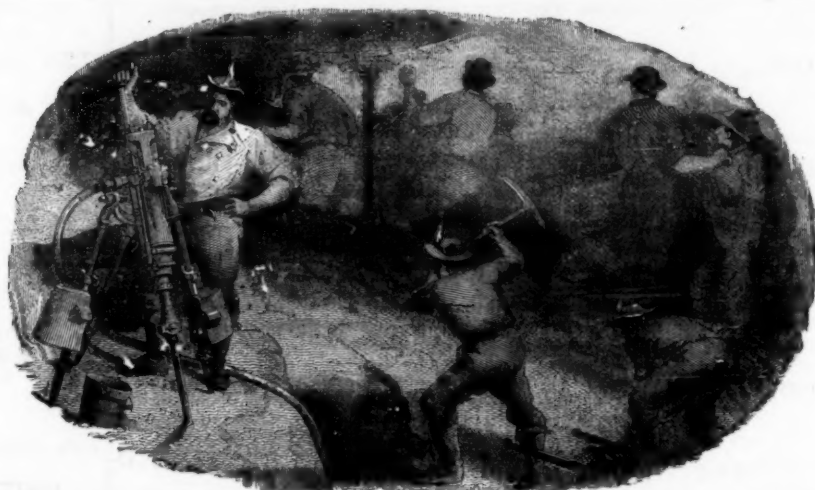
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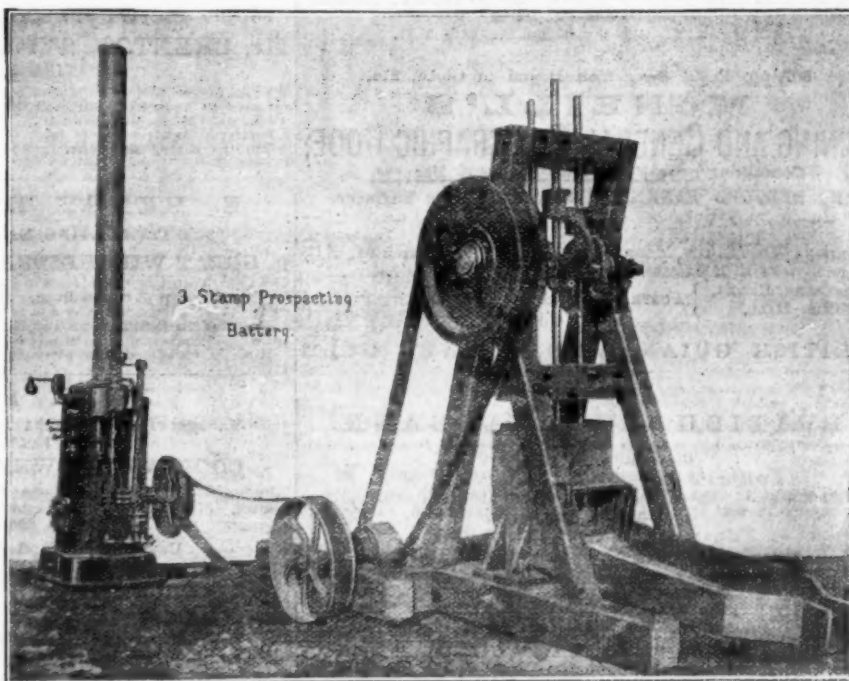
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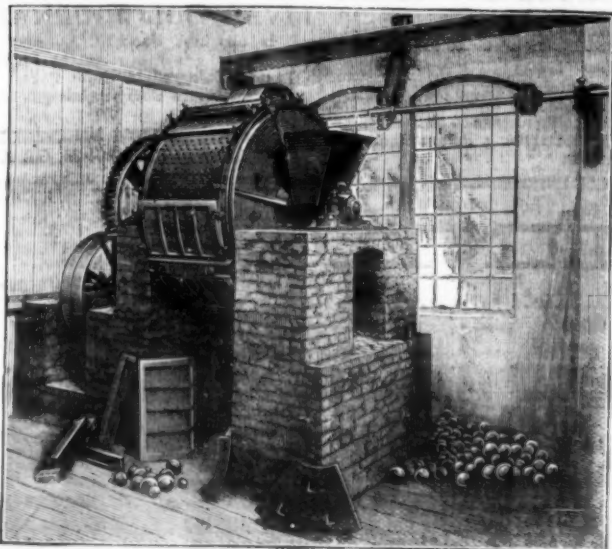
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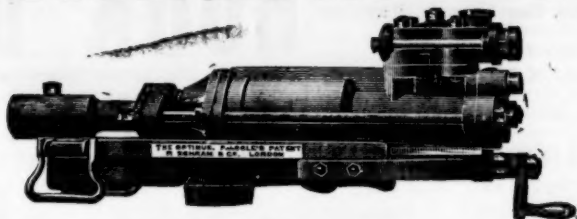
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From R. Burdon Sanderson, Esq., Warren House, Belford
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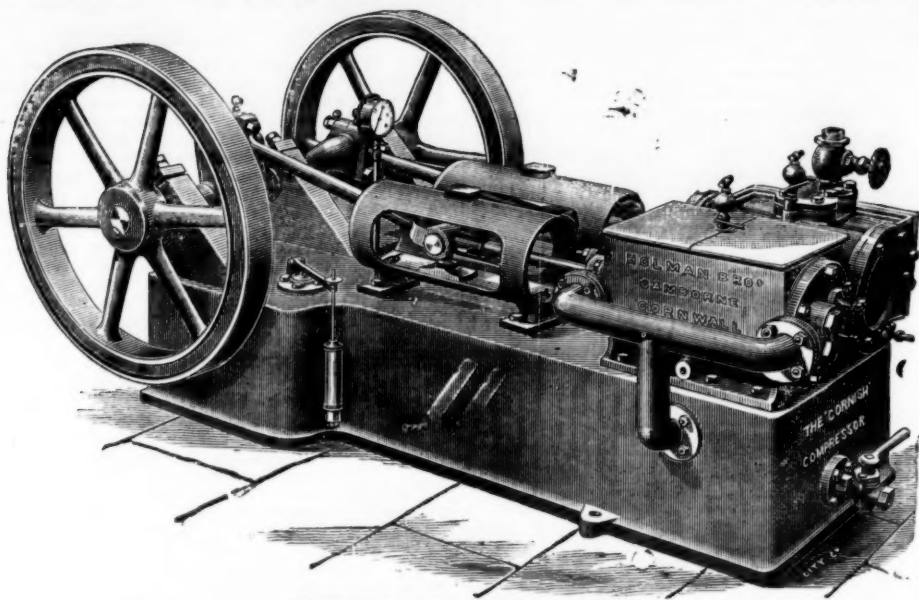
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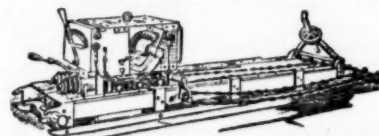
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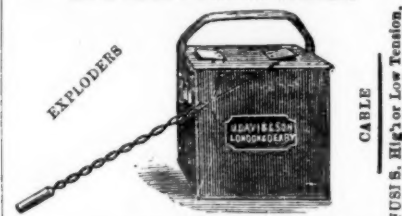
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AWARDS: CRYSTAL PALACE, 1890; TASMANIA, 1891; KIMBERLEY, 1892.

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HOME CONTRACTS.

Steel Colliery Wagons, January 23 (India Office, S.W.).—The Secretary of State for India in Council is prepared to receive tenders to supply steel colliery wagons. The conditions of contract may be obtained on application to the Director-General of Stores, India Office, Whitehall, S.W.

Coal, January 24 (Dublin).—For supplying Whitehaven house coal to the several light-houses on the Irish coast, for the Commissioners of Irish Lights. Forms of tender, with all particulars of the contract, can be had on application to Mr. Owen Armstrong, secretary, Irish Lights Office, Dublin.

Mineral Oil, January 24 (Dublin).—For supply of 31,000 gallons (more or less) of the finest quality of mineral oil for the Commissioners of Irish Lights, to be delivered in the quantities named and at the ports specified in the printed forms of tender, copies of which, together with specification, can be obtained on application to Mr. Owen Armstrong, secretary, Irish Lights Office, Dublin.

Railway Construction, January 25 (Barry Dock, near Cardiff).—For the construction of a new railway, about one mile in length, across Barry Harbour, at the west end of Barry Dock, and of a breakwater, about 140 yards in length, at the entrance to Barry Harbour, for the Barry Railway Company. Drawings and specifications can be seen on and after January 7, at the offices of Mr. John W. Barry, 31, Deishay Street, Westminster.

Reservoir, January 31 (Finsbury, Devon).—For the construction of a storage reservoir, two fifties, and other works connected therewith, for the Finsbury Local Board. Plans and specifications may be seen, and forms of tender, and bills of quantities obtained at the Town Hall, Finsbury, or at the office of the engineers, Messrs. John Newton and Son, 17, Cooper Street, Manchester.

Permanent Way Materials, January 31 (Barry Dock, near Cardiff).—For the supply of the following permanent-way materials, for the use of the Glasgow Railway Company: Steel rails and fish plates, bolts and nuts, chairs, sleepers, oak keys. Drawings and specifications have been prepared by the company's engineers, Messrs. T. Forster Brown and Rees, and Sir James W. Salomper.

The African Gold Recovery Company (Limited) announce that they have received cable information to the effect that judgment has been given by the Transvaal Court in their favour with costs in the cases for the recovery of royalty with the Rand Central Ore Reduction Company (Limited) and the New Clewer Estate and Gold Mining Company (Limited).

NEW PATENTS.

LIST OF APPLICATIONS for New Patents relating to Mining Metallurgical, Engineering, Railway and kindred matters, specially compiled from official sources for the "Mining Journal" by Messrs Rayner and Company, Patent Agents, 37, Chancery Lane, London, W.C., who will forward all information regarding them free on application.

- 379 Philip Plerce, Mill Road Iron Works, Wexford.—Improvements in connection with root pulping or grating machines.—January 7.
- 385 Richard Leopold Kirlow, 56, Clarendon Road, Manchester.—Improvements in the manufacture of flanges.—January 7.
- 400 Arthur Murray, Gordon Cottages, Sunningdale, Berks.—An archimedean drill.—January 7.
- 413 Paul Stark, 45, Southampton Buildings, Chancery Lane, London.—Improvements in motors.—January 7.
- 419 James Macintosh, 41, Holborn Viaduct, London.—An improved composition for preventing and removing the incrustations of boilers and the like.—January 7.
- 428 Adolphe Marie Charles Frédéric Aubert, 65, Chancery Lane, London.—A new or improved system of jointed levers for the transmission of motive power.—January 7.
- 432 Eugene Ageron and Alfred Fournier, 18, Buckingham Street, Strand, London.—Improvements in electric accumulators or secondary batteries.—January 7.
- 439 Michael FitzMichael Mulready, 47, Victoria Street, Westminster.—Improvements in furnace grates.—January 8.
- 453 David Young, 11, Southampton Buildings, Chancery Lane, London.—Improvements in water tube boilers (James Kaine, Charles Howard Boyer, and Frank Woodruff Boyer, United States).—January 8.
- 456 Joshua Crowther and William Crowther, 70, Wellington Street, Glasgow.—Improvements in and connected with Corliss valves for steam engines.—January 8.
- 459 Richard Cox Gough, Lion Rock House, Cheddar, Somerset.—A contracting and expanding propeller.—January 8.
- 469 Bernard Meblus, 23, Southampton Buildings, Chancery Lane, London.—Improvements in method of and apparatus for separating metals.—January 8.
- 490 Max Strohbach, 70, Chancery Lane, London.—Improvements in steam boilers and heating purposes.—January 8.
- 491 Owen Charles Dalhousie Ross, 40, Chancery Lane, London.—Improvements in steam boilers and heating apparatus.—January 8.
- 508 Merrick David Marcy, 115, Cannon Street, London.—An improved method of manufacturing spinning rings from sheet metal.—January 8.
- 517 Augustine Rickaby, 46, Lincoln's Inn Fields, London.—Improvements in valve gear.—January 8.
- 524 Drutt Halpin and James B. Allott, 25, Southampton Buildings, Chancery Lane, London.—Improvements in steam generators.—January 8.

SPECIFICATIONS PUBLISHED.

34733, De la Grée, steam generators, 1893; 25041, Boushardt, governors for steam engines, 1893; 3587, Kitchin, pumping or forcing air, &c., 1894; 3775, Longe, boiler feed, 1894; 4524, Cass, boiler furnaces, 1894; 3849, Saunderson, wind motor, 1894; 7164, Kiegl, furnace, 1894; 1545, Bagshaw, springs for piston packing rings, 1894; 19509, Manuel, metallic packing for piston and valve rods of steam engines, 1894.
The above specifications published may be had of Messrs. Rayner and Co., 37, Chancery Lane, London, at 10d. each, including postage.

ANSWERS TO CORRESPONDENTS.

Correspondents will please take note that all communications will in future be answered in this column and not through the medium of the post. All questions and replies should be accompanied by the name and address of the writer.

REPLIES.

- J. P.—The shares certainly seem a good investment.
- D. S.—We hope to see a rise in these securities before long.
- W. B. P.—(1) We cannot advise you to have anything to do with them.—(2) Wait patiently a little longer.
- M. W.—Undoubtedly; purchase them by all means.
- G. S.—The tone is distinctly favourable. We hope to see shortly an all round improvement.
- REMO.—You would do better to hold both of them.
- F. H.—We consider the shares cheap at the present price.
- E. R. W.—We do not, at present, advise a purchase of these shares.
- W. F.—We do not know sufficient of them to be able to recommend them.
- A. B.—We have a fair opinion of all of them. Perhaps the first mentioned is the best.
- G. W.—Yes.
- M. H.—There is no free market for the shares.

GYMIE'S MINING RETURNS FOR 1894.—The following show, in round numbers, the monthly returns for 1894:—

Months.	Crushings.	Yields.	Costs.	Dividends.
	Tons.	Ozs.	£.	£.
January.....	3,747	3,581	6,123	4,333
February....	6,511	7,147	7,552	13,300
March.....	7,659	10,690	6,844	22,450
April.....	7,069	7,947	6,752	16,650
May.....	7,651	14,894	7,355	32,833
June.....	7,599	10,002	9,106	22,558
July.....	6,770	10,728	7,251	24,075
August.....	6,962	9,087	10,638	17,633
September..	6,624	8,723	8,586	18,933
October....	7,314	8,692	8,053	16,641
November...	8,516	9,153	9,379	14,465
Total....	76,424	100,646	87,630	203,873

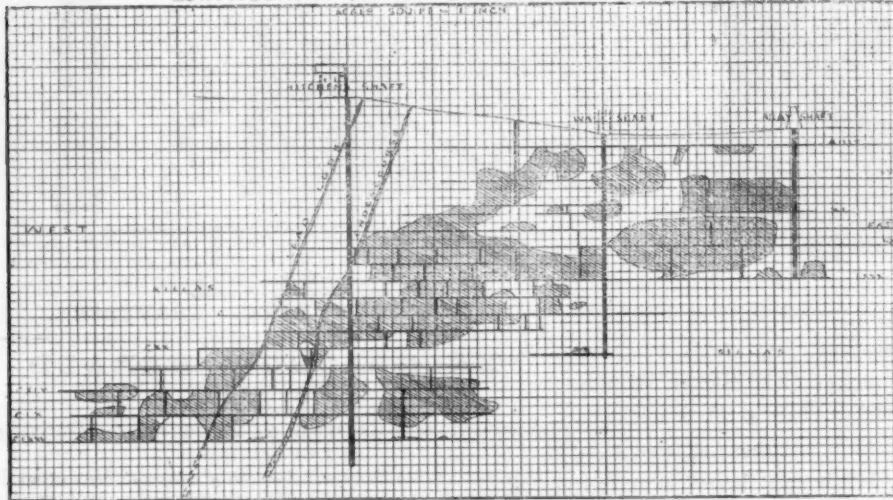
HISTORY OF THE HOLMBUSH, REDMOOR, AND KELLY BRAY MINES.

SITUATED NEAR CALLINGTON, EAST CORNWALL.

By W. F. WILKINSON, F.G.S., Assoc. M Inst. C.E.
(Continued from page 34.)

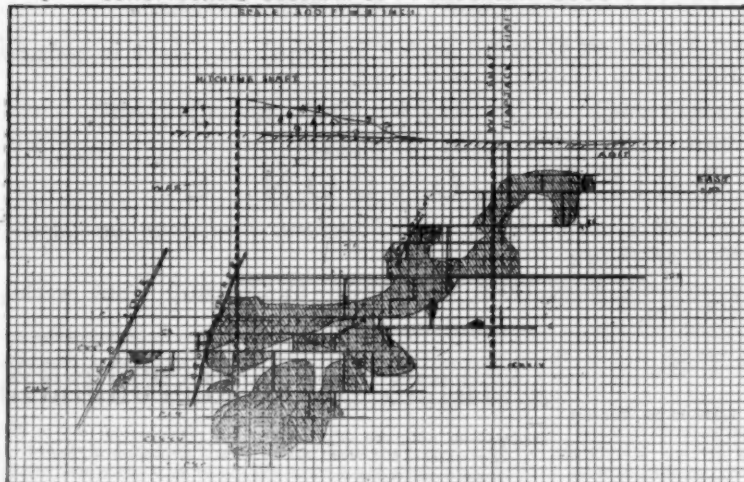
THE New Holmbush Company raised large quantities of arsenic ore from the upper levels, the "Mineral Statistics" recording a production for the year 1877 of 9932 tons of arsenical pyrites. The company was, however, doomed to an early failure through want of capital. In spite of the large output of ore, a heavy expenditure in unwatering the mine and in repairing the abandoned workings seems to have eaten up the profits, and the payment of dividends before the mine had been properly developed no doubt hastened its downfall. The report issued in January, 1877, throws some light on what the paid-up capital was. A credit balance (probably for the previous month) of £430 was reported (Vol. XLVII, p. 158), and there remained available for dividend, after making a deduction for sinking fund, the sum of £361, which equalled 6d. a share on the

LONGITUDINAL SECTION OF HOLMBUSH LODE



paid-up capital. Hence the paid-up capital can only have been £14,440. Whether the whole of this amount was devoted to the service of the mine, or whether part was paid to liquidate old debts and pay the promotion expenses of the company, is not told; but even supposing the whole to have been spent in putting the mines into working order, it must be admitted, considering the size and depth of the mine, that an insufficient working capital was provided. The statutory meeting was held at Callington in April, 1877, Mr. D. Roberts in the chair, and the accounts showed trade profits for the first three months of the year of £1924 14s. 2d., out of which a dividend at the rate of 30 per cent. on the paid-up capital was declared (Vol. XLVII, p. 379). It is interesting to note that large quantities of the

LONGITUDINAL SECTION OF FLAPJACK LODE



arsenic ore raised at this time came from the stulls at the 80 fathom level, where it had been left by the old copper miners. This large production of arsenic ores appears to have alarmed the other large arsenic-producing mine of the district—Devon Great Consols—for reference is made in Vol. XLVII, p. 1342, to a proposed union of interests between that mine and Holmbush, and to a restriction of output. Holmbush again came into the list of dividend-paying mines, the £1 shares being quoted at £13, p. 1436. The flourishing financial position of the company, as put forward by the management, was not, however, allowed to pass unchallenged. "Investigator" wrote soon after, saying that he doubted whether the profits were really earned, and asked for further explanation, Vol. XLVII, p. 600. The management of the mine replied that they could not answer anonymous correspondents. The real state of affairs suggested by "Investigator" soon showed itself, for in the next year, 1883, the mine was suddenly stopped, and the unfortunate miners were sent home without their wages. So great was the distress in the district owing to this unexpected stopping of the mine, that a public meeting had to be held to obtain relief for the miners and their families, at which meeting, as "A Looker-on" remarks, the promoters of the collapsed enterprise, and the happy recipients of the 30 per cent. dividends were conspicuous by their absence. Vol. XLVIII, p. 326. The mines appear to have taken some time to recover from the effects of this scandal, and during 1879 were probably quite shut down. At all events, there is no mention made of them in *The Mining Journal* that year. In the following year, 1880, there are several contributions from one J. Buckingham, of Callington, drawing attention to the mineral resources of the neighbourhood. In 1881, mining was being prosecuted with vigour in the district, especially in search of silver ores.

The silver mines of the Callington district were worked by a succession of companies, reminding one of the periodical gold mining enterprises in Wales. One mine in particular, brought out as a company in 1883, with a nominal capital of £12,500,

under the name of the Birmingham and Harrowburrow Mining Company, is said by J. Buckingham to have had no less than four previous trials under the name of Wheal Fortune, Wheal Newton, the Queen Mine, and the old Harrowburrow Mine. Vol. LIII, p. 56.

Two new companies were registered in 1880 to work the Holmbush and Redmoor Mines, both of which appear to have been under the same management, and to have had mostly the same shareholders. These companies were known as the New Holmbush and the New Redmoor Mining Companies. The New Holmbush Company purchased the mine with permission from the Court of Chancery for £5000. The capital of the company was £40,000 in 10,000 shares of £4, and up to 1883, 6372 shares, with £3 15s. paid up, were allotted. It had also an authorised debenture issue of £10,000, of which £6000 was taken up. This company unwatered the mine from the 40 fathom level to the 145 between April, 1880 and 1883, and sold during that period £33,000 worth of arsenic and £15,000 worth of copper ore. The Chairman of the company was Mr. David Sykes. It would be interesting again in the case of this company to know exactly what working capital was originally provided. That it was insufficient appears from the report of a meeting in 1883, Vol. LIII, p. 893, when the Chairman complained that the experts had been wrong in the capital required to develop the mine. When the mines were taken over it was found that a large expenditure had been necessary to put the mine into working order, the shafts and workings being found full of debris.

The amount of money that has been unnecessarily spent on this property in unwatering and repairing the mines, on account of want of continuity of operations, must be enormous. The great waste of money and credit point to the advisability of the landlords refusing to allow a mining company a lease until satisfied by expert advice that sufficient working capital has been provided to give the mine a fair chance.

In 1883, when the funds of the company were exhausted, and the advisability of calling in outside advisers to what was to be done was being considered, the Chairman informed the shareholders that he had had several conversations with Mr. Smyth (afterwards Sir Warrington Smyth), mineral adviser to the Duchy of Cornwall, about the mines, and that he had repeatedly told him that the mines would never have stopped before if they had sunk the shaft ahead of their levels, and had several levels working instead of doing as they did, and that as far as minerals went the mine would be difficult to beat.

In spite of the exhaustion of funds the mines continued to be worked during 1884 and 1885.

It is pleasing to be able to record that Mr. Sykes' services to the district, in working the mines, received public acknowledgment from those who had most benefited from his exertions. In 1886 a complimentary dinner was given to him by the tradesmen and others of Callington, and a silver inkstand was presented with the following inscription: "Presented by J. Peter, Esq., Portreeve, Callington, on behalf of the subscribers, January, 1886, to David Sykes, J.P., as a slight acknowledgment in appreciation of his valuable services as Chairman of the directors of Holmbush Mine." Vol. LVI, p. 40.

In the same year the low price of arsenic affected the mines, which were shut down, and not re-opened till 1889.

It is necessary now to return to the history of Redmoor Mine between 1880 and 1885. As mentioned above, the new Redmoor Company was under the same management as the new Holmbush, and appears to have been registered about the same time. The price paid for the mine was £2000. The capital was £30,000, in 15,000 shares of £2. In 1883 it is recorded that 7463 shares, with £1 15s. paid, and 601 shares fully-paid, had been allotted, and that £7560 of debentures had been issued.

The mineral production of this mine up to this time, since 1843, is given as follows:—

Copper.....	£ 5,750
Tin	8,200
Lead	120,000

(Vol. LIII, p. 430.)

The Records of the Mining Museum, Jermyn-street, show that in 1853, 1859, and 1860, 9150 ounces silver were extracted from the lead.

In 1882, the shareholders were invited to inspect the new 80-inch pumping-engine and 30-inch drawing-engine at Johnson's shaft. In a speech to the shareholders, the Chairman said that before becoming connected with the company he had taken pains to verify the returns of mineral from this mine at the Stannaries' Office, and he was convinced that, although large returns of ore had been made in the past, the mines were still in their infancy (Vol. LII, p. 650). The bottom of the mine at that time was, and is still (1894) only 125 fathoms deep. Some of the old miners spoke as to the richness of the lodes in the lower workings, which had been under water for many years.

Many interesting facts regarding the early working of both Redmoor and Holmbush Mines were brought to light at this meeting, among which may be mentioned the fact that at Holmbush some of the miners, with a tribute of from 10s. to 13s. 4d., had been known to make as much as £40 a month, which speaks well for the richness of the lode. (Vol. LII, p. 650.)

In 1883 pneumatic stamps were set to work, and the first batch of tin sold. (Vol. LIII, p. 82.) Want of sufficient working capital again prevented the success of the company. Before the mine had been put into fair working order, or any fresh developments made, the coffers of the company appear to have become exhausted, and a struggling existence was then only kept up by working away the reserves. The section of Redmoor Mine showing the ground stopped away right up to the end of the levels, and sometimes even beyond, show only too plainly the hand-to-mouth way in which the mine was worked at this time. The questionable policy of buying old machinery for a

mine where a permanent reliable plant was imperative, may also have contributed to the failure. (Vol. LIII, p. 1084.)
(To be continued.)

GOLD MINING AND MILLING IN THE BLACK HILLS (S. DAKOTA).

By C. G. WARNFORD LOCK.

Introductory.

THE Black Hills occupy the south-west corner of the State of South Dakota, overlapping the western border into Wyoming, covering an area of 4000 square miles, and ranging in elevation from 3000 to 7000 feet. They may be regarded as an isolated off-shoot of the Rocky Mountains, the adjacent (300 miles distant) portions of which range they closely resemble; and are surrounded on all sides by flat prairie, through which they have been thrust. In general outline they are roughly oval.

Since 1876, this limited region has produced at least 15 million pounds' worth of gold, and the annual output is now some £750,000 sterling, the State of South Dakota ranking third in the Union for gold yield. More than 45,000 mining claims are said to have been located, the majority being for gold. This fact alone should mark the district as being worthy of attentive study, but there are peculiarities in the occurrence of the auriferous rocks which invest it with additional interest.

General Geology.

Geologically, the Black Hills consist of a core of Archaean (metamorphic) schists and slates; with occasional masses of granite, above which have been deposited in rotation Cambrian (Potsdam), Carboniferous, Jura-Trias, Cretaceous, and finally Tertiary. The Archaean rocks are, wherever exposed, found to be dipping nearly vertically, and are in consequence unconformably overlaid by the succeeding strata. These latter are, apparently, perfectly conformable with each other, though certain formations (as Devonian and Silurian) seem to be entirely absent, and others are only partially represented. In some districts abundant evidence exists of disturbance and dislocation; and volcanic vents, accompanied by intrusive dykes and overflows of igneous rock, are numerous. Denudation of the crest of the anticlinal has left the sedimentary beds with usually prominent and abrupt outcrops. The country has received much attention from geologists, several of whom have recorded their impressions and formulated their theories.

It may be said that gold occurs in the Black Hills under no less than six different conditions:—

- Bedded veins in the now vertical Archaean schists.
- Beds of conglomerated or cemented gravel formed at the base of the Potsdam (Cambrian) by degradation of a.
- Placers of quaternary and recent age derived from both a and b.
- Flat deposits in the Potsdam sandstone.
- Contact veins in the Carboniferous limestone following igneous intrusions.
- The igneous rocks themselves.

Naturally enough, under such diversified circumstances, the associations and characteristics of the several auriferous rocks exhibit considerable variety, and exert marked influences both on the system of mining employed and on the method by which the gold is separated and recovered. It thus comes about that almost every plan yet devised for exploiting and winning ores is here in use, and that the milling methods run through the whole gamut from the "good old copper plate" to cyanide.

Bedded vein in Archaean Schists.—These deposits are the mainstay of the gold industry of South Dakota, and contribute probably 90 per cent. of the present output of precious metal. They are almost exclusively worked by a single company, the Homestake, on an area of about 6000 feet by 2000, locally called the Belt, or more fully the free-milling belt; but their limit in length is certainly much greater, and deposits occurring 10 miles farther south cannot be distinguished from them. The ore bodies are not continuous, but exist as great lenticular shoots or pipes, at irregular intervals, in beds of argillites, phyllites, and amphibole schists, following their general strike (N. 28° W.), and dipping somewhat more rapidly to the E. My duties did not lead me to an intimate acquaintance with this formation, and for what follows I am indebted to Professor Franklin Carpenter (at one time Dean of the State School of Mines, and now manager of the only successful smelter in the hills), who has for many years studied the local geology. According to this authority, the auriferous deposits were originally laid down as beds simultaneously with the Archaean rocks in which they are found, their present almost vertical position being due to subsequent disturbance. The theory advanced to account for their formation is that at the time when the enclosing rocks were laid down, large quantities of iron protosulphide were formed by the agency of decaying organic matter, the presence of the latter being attested by the graphitic remains now encountered. The iron protosulphide was a apparently not to any appreciable extent gold-bearing, for where the present pyrite beds pass into pyrrhotite—which may be classed as a protosulphide—they cease to be auriferous. The gold is ascribed to the infiltration of auriferous solutions of ferric salts, which at the same time changed the protosulphide to bisulphide, according to the equation



At the south end of the 6000 feet section of the belt are numerous sheets and dykes of igneous rock, locally known universally as "porphyry," but classed by Carpenter as "felsite." These intrusions usually run parallel with the stratification, but sometimes cut across it. At the northern end of the same section no felsite occurs with the ore bodies, but much yet remains as a capping above them. The felsite has exerted a kindly influence on the ore bodies in Carpenter's opinion, but whether it produced an enrichment of the bed or simply rendered it more free-milling, he did not determine. He asserts, however, that the gold yield per ton is much greater than where the igneous intrusions do not occur, and quotes from official data the figures 3.87 dwts. and 2.03–2.82 dwts. gold per ton respectively in support. I do not think these figures can be taken as at all conclusive. Official data are sometimes made to hide the truth, and I have had assays of samples of the ores where igneous intrusions are absent which quite upset the corollary advanced. Moreover, as Carpenter himself shows, the deposit was gold-bearing before the injection of the igneous dykes, as is proved by the fact that even where remote from their influence it is auriferous, and that all similar beds through other parts of the hills where no igneous rocks occur are also gold bearing.

The percentage of pyrite impregnating the schists and forming the ore is never very large, and there are no solid bodies of pyrite. When Carpenter wrote, in 1888, the sulphurets obtained by concentration did not average above 7 per cent., but now they are probably nearer 10 per cent. as greater depths are reached. The ore bodies are also said to be more persistent at lower levels (600 feet), and sometimes to exceed 300 feet in thickness. The average milling yield of the ore raised on the belt is about 3–4 dwts. gold per ton of 2000 lbs. A very large quantity of the mineral does not reach this standard, but the small seams of rich rock occasionally encountered help to bring up the average. At the same time no such highly auriferous shoots and bunches are found now as marked the early history of the mines, and there is little doubt that the theory of enrichment in depth is a fallacy here as it mostly is elsewhere.

Mining on the belt first took the form of quarrying, and the enormous open cuts, measuring several hundred feet each way, are a conspicuous feature in the landscape. By putting down a series

* From paper delivered on Wednesday before the Institution of Mining and Metallurgy.

of deep (20-25 feet) drill holes, chambering at the base so as to accommodate heavy charges of black powder, and firing a number of shots simultaneously, hundreds of tons of mineral are broken down in a single blast; and by adopting a terrace form of working, handling of mineral is reduced to a minimum. Climatic conditions restrict this form of mining to the summer months. Underground the size of the ore bodies imposes costly timbering, the Nevada or square-set system being in general use. The whole surrounding country has been denuded of trees to satisfy the increasing demand in this direction. Rock filling, with waste collected in the very partial hand-sorting which is carried on in the stopes, follows rapidly on the timbering. Accidents and fatalities are frequent. Labour is exceedingly dear, wages ruling at 14s. a day for pick and powder men, 12s. for shovellers, and 10s. for surface labour. All nationalities are represented—Italians, Irish, and Poles predominating—and most men belong to the local Miners' Union, which has contrived to maintain wages at the same rates as ruled in 1876, when all supplies were hauled in 200 miles by bullock teams. Curiously enough, the quality of the labour is by no means superior. Except the foremen and shift bosses, the men do not compare favourably, in intelligence or industry, with the miners of Colorado or California, or even the much-abused Mexican. In face of this, it is surprising that contract work is made the exception rather than the rule, and that machine drilling has only been tentatively introduced during the past few months—proving, as was to have been expected, a pronounced success. The total cost per ton (2000 lbs.) of ore raised, reckoned on nearly one-quarter million tons, much of it from 400 and 500 feet levels, is thus given in the company's published returns:—

	s.	d.
Labour	4	4½
Deadwork	0	11½
Supplies	0	2½
Powder	0	0½
Candles	0	0½
Hoisting machinery repairs	0	2
Oil	0	0½
Timber	0	8½
Wood for fuel	0	2½
Coal for fuel	0	0½
Total	6	9½

Cement Beds.—Beds of cemented gravel or conglomerate occur as appendages to the bedded veins, lying immediately on the upturned edges of the Archean schists, and at the base of the Potsdam. To the latter formation they are attributed, but they must not be confounded with the true Potsdam sandstones. They are purely local, and of limited area, following the outcrops of the bedded veins, which have afforded the materials composing them. They are supposed to have been deposited by the Potsdam sea or lake as it encroached upon the sinking Archean land. However that may be, they are far from being consistently auriferous, very rich streaks of pay-lime occurring just like the gutters of ordinary river gravels. The bulk of these deposits will not average over 3 dwts. per ton, but on certain lines 3 or 4 ounces may be got. The gold is essentially alluvial in character, quite free, water-worn, and of higher standard than that in the veins whence it originally came, the fineness averaging 904 as against 820-850, owing to the silver having been partially dissolved away from the exterior of the particles, as is shown by the fact that the smallest pieces have the highest standard. According to Devereux, who worked some of these cement beds, but little gold was found in the vicinity of the felsite dykes which cut the Potsdam, and such as there was gave every evidence of having been subjected to a powerful solvent, pointing to a leaching action by the mineral waters which accompanied or followed the igneous outburst. These deposits are exploited in a desultory manner by drifting, and only offer inducements to working miners with a small capital.

Quaternary and Recent Placers.—Every watercourse which receives drainage from an outcrop of Archean auriferous veins or of cement beds carries more or less of placer gold: but practically no gold gravels result from the Potsdam sandstones, or from the igneous dykes, and but very little from the sulphurets of the Carboniferous. The first attraction to this field lay in the alluvials of Gold Run, Deadwood Gulch, and Blacktail Gulch, from which enormous sums were taken, and which, even yet, give employment to a few hands. But the chief value of their present product is doubtless in the opportunity thus afforded for covering and disposing of amalgam taken from the mills. Cradles, ground-sieves, and box-sieves of the familiar forms are used, and the former application of hydraulicking is attested by the remains of ditches and head boxes on the hillsides.

Flat Deposits in the Potsdam Sandstone.—Geologically (but not economically) these are the most interesting of all the auriferous formations of the Black Hills, and, at the same time, the least investigated and understood. With their study I was chiefly concerned during my stay in the country. The area of exposed Potsdam beds in which auriferous impregnations occur is about 6-8 by 2-5 miles, occupying that portion of the northern hills lying north of Custer's Peak, and bounded on the north, east, and west by the Carboniferous. A large part of this area is overlaid by sheets of felsite, and probably nearly the whole of it was at one time so covered, but denudation has removed a great deal. The association of this felsite with the gold-bearing zone, and the extension of the igneous flows far beyond where the Potsdam disappears beneath the Carboniferous, have led Carpenter to hazard the opinion that borings put down through the Carboniferous would reveal auriferous Potsdam beneath. Possibly they might, but that any remunerative beds would be discovered is an exceedingly remote chance, because, as I shall presently show, the impregnations are irregular in length, width, thickness, horizon, and value; always limited; and for the major part unprofitable even as superficial workings. I think, therefore, that for practical purposes we may restrict their area to the dimensions named.

Apparently there is a general misconception of the nature of these auriferous deposits. That prominent geologist, Professor J. F. Kemp, speaks of the "Potsdam sandstone, which are old shore beaches now hardened to rock," as carrying gold, and alludes besides to "other deposits in the vicinity of porphyry sheets and dykes, which consists of auriferous pyrite, sometimes oxidised," and further on says that "the gold of the Potsdam sandstones of the Black Hills has been concentrated [by ocean waves] in early geologic time." It is with all deference that I venture to dissent from Professor Kemp's teaching, which, moreover, I think must be founded on a mis-reading of others' statements, and not on personal observation. There is obviously some confusion in it. Only a very small and poor portion of the Potsdam deposits can be regarded as consolidated placer—that limited accumulation at the base of the series which I have already described—and the "concentration" has not been very successful, since the "cement" is no richer on the average than the vein material from which it was built. To describe the "other deposits" in the Potsdam (viz. the impregnated sandstones) as "auriferous pyrite, sometimes oxidised," is to rob words of their true meaning, as will be admitted by anyone on examining the typical example of the rock (submitted), and on studying its complete analysis given below. In local phraseology, the auriferous sandstone beds (not the cement) are always known as "contacts," which again seems to be a misnomer, founded on erroneous conceptions, an "upper," a "lower," and sundry intermediate "contacts" being spoken of, as if there was a regular and systematic sequence of them.

I had abundant opportunity for studying the formation on an extended scale, and gained admission to several scores of shafts and tunnels. From observations thus made I was led to form the following general conclusions:—

(1.) That the Potsdam sandstones, whose worm-eaten character (due to arenicolites) is well shown in the specimens submitted, were, at the time of their deposition, absolutely non-auriferous. Carpenter holds the opposite opinion, speaking of solutions which "dissolved the gold from the Potsdam and redeposited it in certain favourable

localities," and declaring that "assays of the most widely separated portions of the Potsdam, and remote from the locus of igneous rocks, invariably return appreciable amounts of both gold and silver." I was totally unable to confirm this latter statement, and moreover, in view of the almost universal distribution of igneous rocks, it is a hard matter to find any Potsdam which is remote from them.

(2.) That the formation consists of alternating beds of shales, sandstones, calcareous sandstones, and quartzites, lying almost horizontally, the slight dip being towards the north. The total thickness of the beds is computed by Professor W. P. Jenney (late of the Geological Survey) at 200-300 feet. I am ignorant of the means adopted for making the calculation, and I know of no shaft or boring in the country which would reveal the extent of the beds; but from actual levels taken by myself, I can positively assert that the difference between the highest and the lowest workings I examined in a length of less than 1 mile east and west much exceeded 400 feet, and in a length of about 7 miles 1400 feet would not cover it. Therefore, the thickness is much greater than Jenney supposes, or there must be enormous vertical faulting, or both.

(3.) That the vertical faulting of these beds is, perhaps, their most prominent and prevalent feature. Jenney describes it as varying from a few inches to 12 feet or more, which is probably a close approximation to the truth, but he does not sufficiently emphasise the constant recurrence of the phenomenon. The deep-seated disturbances which caused all these vertical throws were doubtless contemporaneous with the igneous outbursts before alluded to, and opened the way for the admission of thermal waters. We have seen that there is a variety of beds in the Potsdam, ranging from shales to sandstones; some of the sandstones have been altered to quartzite, and some of the shales and sandstones are much more calcareous than others. In certain (or rather very uncertain) areas always following vertical faulting planes, which generally run within a few points of north and south, occur patches of auriferous rock. These gold-bearing zones vary greatly in size and richness. Common dimensions are 100-500 feet long, 5-50 feet wide, and 1-10 feet thick. They are encountered at all horizons within a vertical range of 1400 feet, and sometimes several so-called shoots are superposed. They are exceedingly irregular in all respects but one, which is that they are absolutely confined to the more calcareous portions of the strata, the clay shales, and the true sandstones and quartzites being entirely devoid of gold.

(4.) That the deposition of gold in the Potsdam sandstones has been produced by metasomatic interchange between the calcareous particles in certain beds and the auriferous solutions which permeated the strata during or after the igneous outbursts which covered the whole country, and formed numerous dykes. The solutions appear to have flowed downwards by way of the numberless faulting planes, and to have impregnated congenial strata for a certain distance on each side of such vertical channels. Where the mineral has not undergone oxidation, and retains a bluish hue, the microscope reveals rounded grains of silica, embedded in a silicious paste, along with very finely divided iron pyrites, showing how the calcareous cementing matter has been dissolved out and replaced by the silicious-pyritiferous auriferous waters. Every auriferous contact or shoot has its so-called vertical—the joint-plane filled with gold-bearing, iron-stained silicious matter. Sometimes these verticals are so small and indistinct as to require some skill in finding them; sometimes they reach a diameter of several inches. Always they are sure indicators of an auriferous deposit. Where they pass through clay shales and other lime-free beds, no ore need be looked for. The richest portions are encountered at intersections of faulting planes and bedding planes. The degree of impregnation diminishes with more or less regularity and abruptness from the vertical fault plane towards both sides, apparently governed by the amount of solution which found its way in, and the duration of the process of interchange. A very rich vertical is not by any means always accompanied by a very rich or very extensive contact; and frequently the level of the contact on one side of the vertical is several feet above or below that on the other. Though numerous igneous dykes are found traversing these strata, generally following the line of faulting, I have failed to find that they materially influence the richness of adjacent deposits, and it is quite rarely that these deposits can properly be called contact beds as between the sandstones and the igneous rock. Therefore, the local term contact is to my mind misleading. So, too, with the verticals, which are of importance only as indicating the line of flow of the mineral solutions. I found a conviction to prevail that these verticals have some occult relationship with the vertical bedded veins found in the subjacent Archean schists; and everybody aimed at reaching what they were pleased to call the lower contact. Facts—stubborn facts—point to both ideas as being radically wrong. Obviously there is no direct connection whatever between the Archean deposits of Archean age and the Potsdam deposits of post-Cretaceous age. Then, again the quest of the lower contact is only a survival of the old fissure vein notion—mineral wealth ejected from the bowels of the earth, and, therefore, to be sought in depth, the deeper the better. No separate and precise lower contact can be defined. The impregnations occur locally at every possible horizon, and disappear as rapidly as they appear. Some of the richest bodies of ore have been worked right at the surface, only lying a few feet below the igneous capping, and some of the poorest—so poor as to be worthless—are opened 500 feet below them at less than a mile distant. What I want to insist on is that there is no such thing as a general ore horizon on the field, but that each shoot is separate, independent, self-contained, and strictly limited. Moreover, I shall have occasion presently to notice another fact bearing on the question of depth.

The value of the ore ranges all the way from traces up to 4-5 ounces gold per ton. Professor Carpenter, who is associated with some of the best ground, says that "some of the ore bodies will not average over \$15 (15 dwts.), while others exceed \$60 (3 ounces)," and he quotes 1-1½ ounce "as a fair mean." To convey some idea of the value of a claim (1500 by 300 feet in area), he supposes a shoot 40 feet wide, 2 feet thick, and 1500 feet long; this should "yield 10,000 tons, which, at the average value of \$25 (£5), will yield \$250,000 (£50,000) worth of ore." My comment on this is that, as a supposition, it is excellent, and no possible fault can be found with the Professor's arithmetic, but there certainly is no such shoot in the country. The best average that can be got—except for very limited and special localities—is about 12-15 dwts., and there are millions of tons which will not exceed 6-12 dwts. A representative sample of the mineral analysed for me by our esteemed hon. treasurer, showed the following composition:—

Silicious rock	89.95
Alumina	1.20
Iron	4.26
Copper04
Arsenic45
Antimony	traces
Sulphur59
Lime55
Combined water	1.12
Oxygen and carbonic acid	1.84
	100.00

Mining in this formation has its own peculiar features. Only on the most important shoots can systematic work be done. Elsewhere it is a case of following the verticals, jumping up and down at every fault, and removing as much of each bed as will pay for extraction. Fortunately, in most instances the ground stands well, and admits of being worked out in stalls without consuming much timber for props. Pumping and hoisting are rarely necessary, as most of the deposits are attacked by adits. The cost of mining varies with the size of the ore body. A single-handed miner can generally drift at the rate of 1 to 3 feet per shift of 10 hours. On a length of 228 feet, by day labour, mostly in very hard rock, the actual cost, including steel, candles, powder, and timbering 30 feet, came out at 14s. a foot (wages being 14s. a day); and contract work in similar and worse ground was taken at 12s. a foot, the contractors furnishing their own powder, candles, &c., and timbering where

necessary, the timber being provided for them. The largest organisation working in these Potsdam ores (the Golden Reward Company) finds the total average cost of winning the ore (keeping it up to 15 or 16 dwts. standard) to be 6s. a ton, not including any prospecting work, and it is able to obtain some as low as 3s. 9d. a ton. Probably a fair estimate of the total cost (including dead-work) of winning the ore that can be profitably mined is about 10s. a ton, but if 5 or 6 dwts. mineral could be treated successfully, the cost of winning it might be reduced to 4s. a ton, and in some cases even to considerably less.

Contact Veins in the Carboniferous.—Passing northwards beyond the point where the Potsdam beds dip under the Carboniferous limestone, another class of metalliferous deposit is encountered—a mixture of sulphides (galena, blende, and iron pyrites), largely altered to carbonates in the upper portions, occurring along the line of intruded igneous dykes in the Carboniferous. Unlike the Potsdam beds, where the silver is always subordinate to the gold in the ore, here the mineral is essentially silver-lead, gold only appearing at intervals, and then in the iron pyrites or in the gossan derived from its decomposition. The chief localities are Carbonate (village) in the west and Galena in the east. As Professor Carpenter's opinions of these deposits differ essentially from my own, I will briefly quote him first. He regards most of the beds as true contact veins, occurring at the junction of the limestone and the porphyry, and believes that "they were deposited at great depths—that is, before the Carboniferous, Triassic, Jurassic, and Cretaceous rocks which formerly overlaid this section were removed." Of the Ore Fino deposit, which is "found in the Archean rocks near the overlying contact deposits of Galena," he asserts that it "consists of a crater," and that "felsite forms one side of the crater." Now at Carbonate, if I read the rocks aright, there is a series of north-south faults, accompanied by shattered zones several feet wide, and by overlying sheets and intruded dykes of igneous rock. The overlying felsite can be distinctly followed from the adjacent Potsdam on to the Carboniferous beneath which it (the Potsdam) dips, and Carpenter himself says, "the porphyry is in all instances the same." Though this is certainly not true, as the specimens produced will show, yet the relationship of all the igneous rocks is undoubtedly very close. These shattered zones, then, have offered a convenient passage for the thermal waters which brought the metalliferous solutions, and here, again, a metasomatic interchange of particles took place, and the ore was deposited from solution and from above—not ejected from below. The most important mine at Carbonate is Iron Hill, and while some ore yet remains in the workings above the 400 feet level, hundreds of trial borings with a diamond drill have failed to discover the smallest sign of an ore body below that level. Here is the best possible direct contradiction of the theory of deep-seated origin. The only difference I could discover between Iron Hill and Ore Fino is that the latter carries more pyrites and less galena; the genesis of the ore bodies I believe to have been identical, and I see nothing whatever to justify the "crater" theory. However, though auriferous, none of these deposits can be regarded as gold mining propositions, and they only call for mention here on general geological grounds.

Igneous Rocks.—Finally we come to the igneous rocks themselves, which, in dykes, in laccolites, and in sheets more or less eroded, are an ever-present and essential item in the structure of the country. The vents from which the great igneous outburst has come are evident enough, and practically surround the auriferous region. Carpenter believes there to have been "but one period of volcanic activity in the hills." Newton classed all the igneous rocks of the Hills as Tertiary; Jenney defines them as post-Cretaceous; and Carpenter assigns them to that period between the Cretaceous and the Miocene, which is not otherwise represented in the Hills. As to the classification of the rock, opinions are divided. Caswell would call them quartz or felspar-porphyrries, and Dr. S. F. Emmons supports him. Carpenter calls them felsites. The most important feature about them is that they invariably—in my experience—show some trace of gold by ordinary assay. I mean taking such small quantities as represent the usual assay ton, and my note-book contains entries of 20, 20½, 52, 59, and 152½ dwts. per ton of 2000 lbs., some of the samples having been several hundred pounds in weight. In fact, some tons of 2½ and 3 ounce rock have been mined from igneous dykes in more than one locality. The auriferous character of the igneous rock and the intimate relationship between it and the gold found in the Potsdam are established beyond all room for question. Carpenter even says of Galena, that it is "not necessary to assay the porphyry, for both blende and galena can be seen in it in well-defined crystals, which are never pseudo-morphs, while pyrite is seldom, if ever, absent. . . . It always assays in gold."

(To be continued.)

MEYER AND CHARLTON MINE.

Report by ALFRED LEWIS, M.E.

THIS property consists of 40 claims on the Main reef. 50 stamps are now working, leaving profits of over £5000 per month. Dividends amounting to 180 per cent. have been paid during the past three years, in addition to large sums of money that have been spent in developing the mine, improving the machinery, &c., till to-day it stands as a monument of what good sound management can do, being one of the best developed and equipped mines on the Witwatersrand.

An extra 50 stamps are being erected, the work being pushed ahead vigorously, so that within four months' time 100 stamps should be at work, when the result and the profits will be so much increased, that it is quite safe to predict that this mine will then be one of the largest dividend-payers on the Rand.

Out of 40 claims there are over 30 that still have to be worked, and the tonnage from these will be great owing to the main, south, and middle reefs consisting of such enormous bodies of ore. This company has as great a tonnage and profit per claim as any mine on the Rand. On the western boundary, where the reefs enter this property from the City and Suburban, the three reefs would average over 14 feet in width, all of which are highly payable. In some places the Main reef alone is over 13 feet wide, and would give over 2,500,000 tons of highly payable ore. Assuming that 100 stamps will crush 150,000 tons a year, of which a profit of not less than £1 per ton should be realised, dividends at the rate of 120 per cent. should be forthcoming until the mine is worked out, especially as the cost of working is very little more with 100 stamps than it is with 50 stamps. Taking the present market value of the shares, this property has a rough valuation of about £600,000, and as the chances are all in favour of fully £2,500,000 being distributed in dividends before the mine is exhausted, it will easily be seen what a splendid future there is before this company, and what a good investment these shares are at present prices. If 150,000 tons per annum are crushed the life of the mine may be estimated at fully 18 years, and during that time will return in dividends over 17 per cent. per annum on the present market value. This mine has opened up beyond all expectation, and is one of the few exceptions where the ore has been found to get richer as depth is attained. Large reserves of ore are in sight and by the time the extra stamps are ready to start, there will be over 150,000 tons developed.

There are many mines in the market to-day standing at an equal valuation, and in some cases higher, that have not anything like the prospects of this one. It has also the advantage of having the services of one of the best general managers on the Rand.

* "Ore Deposits of the United States," pp. 217, 240.

RAND MINES, LIMITED.

By Mr. ALFRED LEWIS, M.E.

THE capital for developing the different mines is furnished by Messrs. Eckstein and Co., who up to the 31st January, 1894, had advanced the company £150,000 at 5 per cent.; but this amount has been considerably increased since that date, and no fear need be entertained as to the future cost of development, as all money required from time to time will be forthcoming from this source. The Crown, Nourse, Geldenhuis, and Rose Deep Levels are being developed as fast as possible, and the work done up to date shows that no time has been lost. By the time these mines are fully developed and in a dividend-paying position, a sum of not less than £600,000 will have to be expended by the Rand Mines (Limited) as their portion of expenses. Against this there are 67,292 shares reserved, which, if sold at £20 per share, would realise £1,345,840 sterling, and this amount would be sufficient to develop all the properties owned or controlled by this company. It is quite evident that the directors are fully alive to the value of the several properties, and it is not at all likely that they will part with these shares at the present prices.

RAND MINES' PROPERTIES THAT ARE BEING WORKED.

Geldenhuis Deep.

This is the best developed mine of the company, having nearly 1,000,000 tons of ore ready for milling, and the assays and panning prove it as payable as the outcrop mine—the Geldenhuis Estate. The reefs are enormous bodies of ore, and can be mined cheaply, and as this will be the first of the Deep Level mines to produce bullion, a few words as to its prospects should be of interest to mining investors. With 100 stamps at work a profit of at least £150,000 per annum should be maintained, and minimum dividends of over 50 per cent. be paid. It is the intention of the management to erect 200 stamps, and as this will mean a decrease in working expenses and an increase in the profits, it can be expected that before the end of 1896 this mine will be returning dividends of over 100 per cent.

Nourse Deep.

All experienced engineers and miners who have seen the reefs opened up in the eastern shaft are unanimous that they contain the best bodies of ore that can be seen on the field, and if there is a Deep Level mine that has improved at depth, it is this one. The ore has a greater value per ton than that in the other Deep Level mines, owing to the reefs being richer. It will be fully two years before the 200 stamps are at work, when profits equal to 75 per cent. should be returned. The life of the mine will be a long one, as it consists of 269 claims.

Crown Reef Deep.

The reefs have been opened up in the eastern shaft, and the assays are highly payable. The ore bodies are large, and the future of this mine is assured beyond doubt.

Rose Deep.

Active work is being carried on, but so far the reefs have not been tapped, but on this score there need be no anxiety, as the outcrop mines have practically proved this property, and there is little doubt that in the future it will be one of the leading gold producers on the Rand.

Concerning other Deep Level mines, such as the Jumpers, Ferreira, George Goch, Spes Bona, May Consolidated, Langlaagte, and Roodepoort, no fears need be entertained regarding their future, as they are daily being proved by the work being carried on in the outcrop mines. The prospects of Jumpers and Langlaagte Deep are exceptionally good, and in the future will probably give results that will astonish the mining world. Those who are lucky enough in securing an interest in these mines would be wise in holding until the dividend stage is reached, when they are sure to command a much higher figure than at present.

Many outcrop mines have to-day a market value of £20,000 per claim. The Deep Level properties have equally good prospects, with a much better chance of being worked cheaper; and, with these facts before me, I am estimating the values per claim of the properties held by the Rand Mines (Limited) at from £10,000 to £50,000 each. I am really underestimating the value of the Rand Mines' holdings, but, on my basis of values, the undermentioned few facts and figures should prove to shareholders in these ventures what real good holdings they have. For instance:—

The Crown Deep, in which the Rand Mines hold 148 claims, taken at my valuation of £10,000 per claim, would represent.....	£ 1,480,000
Henry Nourse Deep, also undervalued at £10,000 per claim. Rand Mines' interest in this property is 265 claims.....	2,650,000
Geldenhuis Deep, taken at the same valuation of £10,000 per claim, and in which the Rand Mines have an interest of 94 claims.....	940,000
Rose Deep. The Rand Mines' interest is 57 claims, valued at £10,000 each.....	570,000
Langlaagte Deep, valued at £10,000 per claim, and in which the Rand Mines hold the whole interest of 210 claims.....	2,100,000
Ferreira Deep. The Rand Mines' interest here is 81 claims on same valuation.....	810,000
The Spes Bona and George Goch Deep are not quite so valuable as the other Deep Levels, but taking them at, say, £6000 per claim, and the Rand Mines having the whole interest of 150 claims, represent.....	900,000
May Consolidated Deep have a block of 64 claims, which in the future will be very valuable, as the mines at this point have shown great improvement at depth. This property is all held by the Rand Mines, valued at £10,000 per claim.....	640,000
Jumpers Deep. A block of 210 claims all held by the Rand Mines, and valued at £10,000 each.....	2,100,000
Roodepoort and Star Deep. 95 claims not up to average. I estimate the values at £4000 per claim, all held by the Rand Mines.....	380,000
	£ 12,570,000

On my low estimates the approximate total value of the Rand Mines' holding in these Deep Level mines amounts to the large sum of £12,570,000 sterling.

Besides the above holdings, there is the farm Mooifontein and other blocks of claims which form valuable assets of this company, and which will no doubt in the future be absorbed by the several mines already mentioned. There are also several assets that I could enumerate; but I feel sure that the facts I have already given will be more than sufficient to satisfy investors that the shares of the Rand Mines (Limited) at present market prices are a good investment.

The unissued capital of this gigantic concern is £332,708, and at £20 per share represents a value of a little over six and a-half millions sterling; and taking the interests they hold in the several Deep Levels that I have enumerated, and on the low values put upon them, they have a surplus of six millions, or close upon 100 per cent. over present market value, so that there is plenty of room for a substantial rise in these shares. At the same time it would be well for me to mention that it will be some considerable time before this company will pay dividends; but to those who look ahead and can afford to wait, this is one of the soundest investments in South Africa at the present day. It may seem strange, but I firmly believe that the Johannesburg gold fields will, at no distant date, be known as the Rand Mines (Limited). They have the pick of the Deep Levels, which will be the mines in the future, and I am satisfied that it is the greatest gold mining proposition that has ever been formed.

The Rand Mines (Limited) owns in all 1729 claims, and estimating

that the profits per ton will be at least £1 each, and that each claim will yield about 30,000 tons of ore before being worked out, the total profits would amount to close upon £52,000,000, so that a property of such magnitude and great possibilities, only standing to-day at a market value of £7,000,000, must have a great future before it and offers a good field for investment.

The estimate of 30,000 tons per claim is very low; the returns from the central section of the Rand will average far more than this, so that really my valuations of £10,000 per claim scarcely does the company justice. In making this assertion I am guided by the results from the outcrop mines, from which the Deep Levels have and are gaining valuable experience in their methods of working, and naturally economising in expenditure.

At the present time some of the claims of the leading outcrop mines have market values of from £15,000 to £25,000, and these in many instances more than half worked out. It is interesting to note that the 26 outcrop mines on the central section of the Rand have during the past 12 months advanced in value 100 per cent., and have now a market value of over £25,000,000, and only have in all 976 claims, and these partly worked out. On the other hand, the Rand Mines possess 1729 maiden claims, and have only a market value of £7,000,000. These figures may seem strange to those not initiated in the ways of mining; but, nevertheless, they are facts that cannot be gainsaid. Apart from the consideration that has to be paid to the Rand Mines promoters, it is evident that the shares at present are standing in the market considerably below their value, especially when a comparison is made with the values of outcrop mines. The 26 outcrop mines above mentioned have only an estimated profit of £35,000,000 before being worked out, as against the Rand Mines' estimated profit of £52,000,000, so that the present market values of the respective shares will not bear comparison.

SULPHUR DEPOSITS IN THE VOLCANO OF POPOCATAPITL.

Translation of an Article in "El Monitor Republicano."

By DONALD STEWART (Mexico).

THE Scientific and Exploring Commission has at last finished its laborious and somewhat delayed report. The plans which it has issued are beautifully drawn, and appear like engravings in their exactitude and fineness of detail. These plans are six in number:—

The first marks with exactitude the line of country from a starting point in the valley of Ameca, giving the different levels and the sinuities of the ground, running upwards and including all the wooded slopes of that most picturesque country, until the point where vegetation ceases, continuing upward successively through the lava region, the araneous belt, the perpetual snow-line, until it reaches the mouth of the volcano.

The second takes the Rancho de Tlaxmacas as a base point, and also gives the curves and levels of the country around, and ends, as does the other, at the mouth of the crater.

The third is a horizontal projection of the great crater itself, with measurements of the circumference, diameter, and area.

The fourth gives a plan of the area in which are found the blow-holes, or "respiraderos," from which proceed the sulphurous gases inside the crater of the volcano.

The fifth is a sectional drawing of the crater, looking like an inverted cone, to give an idea of the immense extent of the sulphur deposit which has been accumulating itself there during past centuries.

The sixth is a drawing showing the course to be traversed by the aerial ropeway, moving by gravity, running from the mouth of the crater to the Hacienda de San Pedro, situated at the entrance to the Valley of Ameca, and distant from the town of that name about 5 kilometres.

This cable ropeway has for its principal object the easy and economical conveyance of the sulphur from the crater, also pure snow in blocks for use in the City of Mexico for most purposes for which ice may be used, also the conveyance of tourists to and from the Peak of Popocatepiti in a safe and quick manner.

All these plans have been submitted to and approved by President Diaz, by whom this scientific expedition had been ordered, and who is himself much interested in its results, as being likely to be of great benefit to the country.

The report cites the opinions of the principal geologists of the world in support of the theory that extinct volcanoes have a constant flow of sulphurous gases proceeding from central fires having a temperature of more than 500°. These gases, while seeking an outlet, and during the cooling or sublimation process deposit sulphur, more or less pure, being thus a constant sulphur-producing medium, as is seen in Mount Etna, and other volcanoes, from which, and with Sicily, is produced annually the enormous quantity of 200,000 tons, with which to supply the industrial world.

This theory in geological science includes the volcano of Popocatepiti amongst these extinct volcanoes; and the great geologists Humboldt, D. I. R. G. Sontar, and the Mexican geologists Antonio del Castillo, Santiago Ramirez, and others, consider it a great sulphur centre, containing in its bosom millions of tons of pure sulphur, gradually, but constantly, deposited there during the course of centuries.

TIN TICKETING.

A TICKETING for tin ores was held at Tabb's Hotel, Redruth on Tuesday, with the following result:—

VALUES OF ORES SOLD BY EACH MINE.			
	Tons cwt.	Per ton.	Value.
Dolecath.....	14 0	£36 2 6	£505 15 0
do No. 1a.....	13 0	36 12 6	463 2 5
do No. 1b.....	13 0	35 12 6	463 2 6
Wheal G enville a.....	15 0	35 17 6	538 2 6
do b.....	19 0	36 15 0	698 5 0
Tincroft.....	15 0	30 15 0	451 5 0
do.....	14 0	30 15 0	430 10 0
do.....	3 0	14 2 6	42 7 6
Carn Brea No. 1.....	15 0	33 0 0	495 0 0
do No. 1a.....	15 0	31 0 0	465 0 0
do No. 2.....	1 10	22 5 0	33 7 6
South Frances No. 1.....	12 0	34 15 0	417 0 0
do No. 1a.....	12 0	34 5 0	411 0 0
Wheal Bassett No. 1.....	20 0	36 12 6	732 10 0
do No. 2.....	4 0	26 12 6	106 10 0
East Pool No. 1.....	17 0	30 10 0	518 10 0
do No. 2.....	1 10	14 7 6	21 11 3
Killifreth.....	15 0	34 5 0	513 15 0
West Kitty.....	12 0	36 17 6	442 10 0
Wheal Azar.....	10 0	31 5 0	312 10 0
Phonix United No. 1.....	10 0	33 15 0	337 10 0
South Condarrow.....	8 0	37 5 0	298 0 0
Wheal Kit y.....	4 0	34 10 0	138 0 0
Ryan and Co. No. 2.....	3 0	41 7 6	124 2 6
do No. 3.....	4 0	38 12 6	154 10 0
do No. 4.....	6 0	27 2 6	162 15 0
	276 0		£9286 11 3

Average price per ton £33 12s. 11d.

AVERAGE PRICES PER TON.

Oct. 23.....	£39 16 11	Dec. 4.....	£35 10 10
Oct. 9.....	38 11 1	Dec. 18.....	35 9 5
Nov. 7.....	37 15 6	Jan. 1.....	33 0 2
Nov. 20.....	37 12 4	Jan. 15.....	33 12 11

The SUBSCRIPTION LIST will be CLOSED not later than noon on SATURDAY, the 19th January.

A SPECIAL CONCESSION FROM THE CHARTERED COMPANY OF BRITISH SOUTH AFRICA OF MINING RIGHTS OVER ABOUT 75 SQUARE MILES OF THEIR TERRITORY.

MOORE'S RHODESIA CONCESSION

(LIMITED).

Incorporated under the Companies Acts, 1862 to 1890.

CAPITAL, £150,000,

IN 150,000 SHARES OF £1 EACH.

Of which 50,000 Shares to be issued as fully paid will be taken by the Vendors and The British South Africa Company, in part payment for the property.

SUBSCRIPTIONS are invited for 100,000 Shares of £1 each,

Payable 2s. 6d. per Share on Application,	
" 7s. 6d. " on Allotment,	
" 5s. " One Month after Allotment,	
" 5s. " Two Months after Allotment.	
20s.	

DIRECTORS.

ALBERT DEACON, Esq., 12, Fenchurch Street, E.C., Messrs E. and A. Deacon, of the Hong Kong and Shanghai Banking Corporation (London Committee).

W. H. FRITH, Esq., 69, Lombard Street, Director, Village Main Reef Gold Mining Company (Limited).

LEIGH HOSKINS, Esq., Director, Consolidated Gold Fields of South Africa (Limited).

PERCY TARBUTT, Esq. (Messrs. Tarbutt and Quentin), 23, St. Within's Lane, E.C. (Managing Director); Director, South African Gold Trust (Limited).

W. J. THOMPSON, Esq. (Messrs. W. J. and H. Thompson), 38, Mincing Lane, E.C., Director, African Banking Corporation (Limited).

BANKERS.

THE UNION BANK OF SCOTLAND (LIMITED), 62, Cornhill, E.C.; Glasgow, Edinburgh, and Branches.

THE AFRICAN BANKING CORPORATION (LIMITED), 43, Threadneedle Street, E.C.

SOLICITORS.

Messrs. FLUX, THOMPSON, and FLUX, 3, East India Avenue, E.C.

BROKERS.

Messrs. G. H. and A. M. JAY, 17, Old Broad Street, and Stock Exchange, London, E.C.

AUDITORS.

Messrs. COOPER BROTHERS and CO., Chartered Accountants 14, George Street, Mansion House, London, E.C.

SECRETARY.

A. J. MAY, Esq. 110, Cannon Street, London, E.C.

OFFICES.

ABRIDGED PROSPECTUS.

THIS Company is formed to acquire a Concession from the British South Africa Company, to Mr. HENRY CLAY MOORE, granting exclusive rights of mining minerals and metals over about 75 square miles in Matabeleland and Mashonaland, subject to the mining regulations of the British South Africa Company. This Concession is regarded as quite exceptional, and covers a greater area than can probably again be acquired under one grant.

Mr. Moore visited Matabeleland prior to the time of the British South Africa Company's Charter, and had sought from King Lobengula certain rights, which eventually resulted in the granting by the British South Africa Company of the present Concession.

Utilising his knowledge of the country, and having satisfied himself of the existence of old workings and reefs in the neighbourhood of the Mazoe River, Mr. Moore made selection of his ground, under the Concession, in that district. In May, 1893, Mr. D. TYRIL LAING was sent in charge of a party of prospectors, specially to explore the Concession. During the four months he was working on the Concession he discovered and prospected many gold reefs, and has written very full reports, and which, with his diaries, may be seen at the Offices of the Company.

Copies of the Agreements and of the Memorandum and Articles of Association can be seen at the Offices of the Company.

Contracts or arrangements have also been entered into with divers persons in relation to the formation of the Company and for guaranteeing a portion of the Capital of the Company which may be Contracts within the 38th Section of the Companies Acts, 1867. Applicants for Shares shall therefore be deemed to have had notice of all such Contracts, and to have waived all right to particulars thereof, whether under the said Section of the Act, or otherwise.

Applications for Shares must be made on the Form accompanying the Prospectus, and should be forwarded to the Bankers of the Company, or to the Secretary at the Offices of the Company, accompanied by a remittance for the amount of the deposit.

If the whole number of shares applied for by any applicant be not allotted, the surplus amount paid on deposit will be appropriated towards the sum due on allotment. Where no allotment is made, the deposit will be returned in full.

Prospectuses and forms of application can be obtained at the offices of the Company, or from the Bankers, Solicitors, or Brokers.

Dated January, 1895.

In order to give his colleagues, Mr. D. J. Pennington and Mr. N. F. Wilson, who have helped him in the conduct of his business for many years, an opportunity of connecting themselves more directly with it, Mr. Gilbert Gilkes, of the Canal Ironworks, Kendal, has formed a small private Limited company, and they will henceforth carry on these works and their engineering business under the style of Gilbert Gilkes and Co. (Limited). Mr. Gilkes will retain the position of governing director, and his friends will each take the office of director.

We are requested to announce that the Bechuanaland Trading Association has, by resolution of the board of the British South Africa Company (Chartered Company) been appointed mercantile agents to that company.

MEETINGS OF MINING COMPANIES.

POLBERRO MINE COMPANY.

Brilliant prospects at the mine.—An abundance of testimony.

An ordinary general meeting of shareholders in the Polberro Mine Company was held in the account-house on the mine, at St. Agnes, on Friday in last week.—The Chairman of the company, Mr. JOHN B. REYNOLDS, presided.

Mr. G. C. HANCOCK read the notice convening the meeting. The CHAIRMAN said: Gentlemen, with reference to the statement of account which has been printed and circulated, you will observe an item of 15s. down as arrears of call. That 15s. has been paid, and there is a telegram from the bankers to that effect on the table; so that at this moment there is not one farthing of call in arrear; the balance at the bankers is £144 18s. 11d., and there are no liabilities due or unpaid. With reference to the small amount credited for tin, I should not have been at all surprised if nothing had been credited, but it was necessary for us to get a little of the tin out of the way, and we have, I suppose, a ton and a-half of tin now at surface. If anyone will take the trouble to have the ground measured, they will find that the returns of tin exactly correspond with the valuations which from time to time were made in the reports. Before I offer any further observations, I will ask Captain Thomas to read his report.

Captain CHARLES THOMAS presented the agents' report, which was as follows:—

Since the last meeting we have fixed the new angle-bob at the 14 in Trevaunance engine shaft, completed the rods and pitwork in the underlie shaft, and sunk the shaft 8 fathoms below the 26. Preparations have also been made for a skip road in this shaft. This work and the cutting of the necessary ground to make room for the alterations have taken some considerable time, and caused extra expense. Everything connected with the new work is in operation, and giving thorough satisfaction. We are now in a position to continue sinking the engine shaft on the Pink lode immediately underneath the very favourable channel of ground driven through in the 26 crosscut north. The drainage of the 26 crosscut north has been resumed since the last meeting. This crosscut is now driven 11 fathoms north of Southhouse lode. For the last 4 fathoms this drainage will yield 30 lbs. of tin to the ton. We consider the results of driving this crosscut very satisfactory. We found that, for the distance driven upon it, some 13 fathoms, the Southhouse lode would pay to work—in fact, would leave a profit on working, if wrought on a larger scale. The great importance of these facts will be seen when it is remembered that Trevaunance shaft is now being sunk underneath the crosscut on the Pink lode, and that all these veins and branches will fall in upon that lode in depth. We propose to drive west on the crosscut at the 26 on Chappel's downright lode a short distance, and then to sink and communicate to the shaft. This lode is 7 fathoms south of Southhouse lode. Since the last meeting we have driven 12 fathoms east on Pink lode, and have risen about 3 fathoms in the back just behind the eastern end, where the lode is worth for 12 feet long, £14 per fathom. It will be evident that the prospects of the mine are of the highest order, and that that fact cannot be successfully disputed.

Captain THOMAS, in supplementing his report, said: In cutting the ground for the angle bob at the 14 fathom level we found it very hard and very tough, and we had to cut back for 22 feet. That cost us a little extra expense and a little time. The agents of West Kitty, Captain Harper, and myself went down on Wednesday, and I think they will bear me out when I say that the bob is quite equal to any work that will be required here for 10 years to come. We thought it necessary to take some men from the 26 east, on the Pink lode, to assist us in putting in the bob; hence we have not done so much work in that end as we could have done. We have taken sometimes two and sometimes four men from there to help us to fix the bob. We have driven there about 12 fathoms, and put up a rise. We have had a very good shoot of tin, and there is a very good lode gone down in that level for 5 fathoms. The rocks of tin that came from there are laid on the table; they are fully half tin, and can be seen by you directly. You cannot see finer rocks of tin in the parish of St. Agnes—(hear, hear)—nor yet in the district of Camborne, than those rocks on the table. (Applause.) Now, then, for the future of the mine. The work having been done in the shaft, which has been sunk down to the 26, the bob fixed, and pitwork fixed, our point now is to sink the shaft as rapidly as possible, and we calculate that we shall see the junction with Chappel's downright in 16 weeks. (Hear, hear.) These stones of tin—very fine in themselves—are from Chappel's downright, which will be the first that will fall in on the Pink lode. While we were underground we went into the crosscut and saw these branches. They are very fine branches, and that is beyond this lode something like 18 fathoms, and intermediately there is the Southhouse lode, which we opened on 10 fathoms in length, and which made an average for that 10 fathoms of 34 or 35 lbs. of tin to the ton. I will tell you what Captain Charles Thomas, the late manager of Dolcoath, and father of Captain Josiah Thomas, told me 30 years ago. He was the mineral agent, and acted for the lord in Wheal Vor, and he told me, when the lode failed in the bottom of Wheal Vor, he went underground. They had put a crosscut out north 28 fathoms, and seeing that there were no branches falling on the lode, he carefully examined the crosscut, but could not find a single branch there. If he could have found, he told me, a branch 4 inches wide, with a little mineral in it, he would have written hopefully. Taking his opinion—and a very practical man he was, one of the best mine agents the county has seen—seeing that we have all these branches producing tin which will all fall on the Pink lode—then, I am of opinion that we need not speculate as to the future. It is not a matter of speculation, but of certainty. We have nothing to fear in the future of Polberro. It is in the prospective, one of the finest properties in the county of Cornwall. (Applause.) In order to work this we are pushing matters on as rapidly as possible. The sump shaft is down 8 fathoms, so that the sinking of the next 15 fathoms is very important, and so also is the sinking of the winze in Chappel's downright. We have 12 men and three boys working stem time as well, and have set them a contract for 12 fathoms, at £15 per fathom; and we have offered them a premium of 10s. per fathom, provided they sink 4 fathoms a month. I have to congratulate you on the position of Polberro. We are very pleased with the state of the mine, and also with the future prospect. (Applause.)

Mr. ROWSE: How are the men getting on with the shaft?

Captain THOMAS: Very well indeed. The ground is a little better than it has been. We ought to sink over 4 fathoms a month in the Chappel's downright part, and by sinking 10 fathoms there, we shall come down on the lode.

The CHAIRMAN: Gentlemen, in moving the adoption of the report and accounts, I do so, of course, with a great deal of confidence and pleasure. I know what is in all your minds. I refer to the question of the price of tin. I have nothing more to say about that than I stated at the meeting of shareholders in West Kitty, held in London not long ago. I said then that the immediate outlook was not favourable for the speculators for the rise in the tin market, and I say so again to-day. I have no doubt that we may see still lower prices, because of the conflict in the tin market which is going on between the "bulls" and the "bears." Directly we know which side is victorious, we shall see, I have no doubt, a very sharp and very great recovery in the price of tin. I cannot but think that Cornwall is just now rather cruelly served, but it is no use talking about that. We must take things as we find them, and make the best of them. My own feeling is—and it is a very strong one—that Cornish shareholders are very foolish to raise a single ton of tin at present prices more than they are absolutely compelled to raise. By forcing returns, depend upon it, you are simply playing into the hands of the operators for the fall, whoever these operators may be. I do not know who they are, and I do not care to enquire. Those of us who have had any experience at all of markets must be very foolish, indeed, if we are at all uneasy about the future, setting aside the immediate future. Those of you who study the trade reports, and the course of business in the railway market on the Stock Exchange, and those of you who give any thought whatever to the course of the goods on the Continent, to say nothing of the peace which will soon be proclaimed between China and Japan—those of you who have

given attention to all these subjects, and have not forgotten to take into account the very great depression which now exists in the United States, must come to the conclusion, I think, that in the future—and not in the distant future—we shall have trade to such a pitch, in such a satisfactory state, as none of us have ever known it before. (Applause.) I am firmly convinced that we are on the eve of a great revival in trade. If we are not, how is it? how can you account for the operations which are now going on on the Stock Exchange in the railway markets? You must know, if you watch the course of events there, that railway stock is in very great demand. Why are railway stocks in such demand? Because the buyers—and they are very numerous—are simply purchasing in anticipation of the great revival in trade which they know is close upon us. Now, when that revival of trade fairly sets in—and it is certain to fairly set in—then, gentlemen, we shall be out of the hands of the cliques in the tin market in London—(hear, hear)—and we must look to this revival in trade for any appreciable advance in the price of tin. Then there is another question, about which I do not feel qualified to speak. I mean the silver question. And that, I see, has been made the subject of some very wise remarks by Mr. Marshall, the Chairman of the South Condarrow Company. I will only say, with regard to that, that I believe a solution of the difficulty will be found directly we have a change of Government—(hear, hear)—and although I have no wish whatever, nor any intention to touch on political matters to-day, yet I do say that the present Government have done nothing in the silver question, and they seem powerless to suggest any remedy for the present terrible state of things as far as silver is concerned. On the other hand, Mr. Balfour, who is certainly one of the rising statesmen of the day—a man to whom England may well be looking at the present moment—Mr. Balfour has a remedy, and is, no doubt, willing to put that remedy into force. Well, gentlemen, we, as tin producers, must acknowledge—apart from any would-be candidate in this division for Parliamentary honours—that we have no cause for apprehension in the change of Government, which is now very near upon us. I have no doubt as to the issue of the next General Election; and I have as little doubt as to the beneficial effects which must follow from the change of Her Majesty's Ministry. (Applause.) Turning to our own mine, I am simply delighted with it. To say that I have confidence in it is not saying anything to give you the slightest idea as to my feeling about it. I believe that the late Captain William Vivian was right, when he declared in Paul's Hotel that Polberro was the Dolcoath of the St. Agnes district, and that he was certain it would turn out one of the most splendid mining properties of the times; and, gentlemen, that he was right, I think what is now transpiring is the evident proof. Where will you find anything like this, I want to know, in Cornwall to-day? If anybody will point me out any speculation equal to this, I will go into it at once—(hear, hear)—but I do not believe that such a thing is possible. Polberro is, I thoroughly believe, the finest thing at the present moment in this county. I except Dolcoath; that, undoubtedly, is a dividend mine of the greatest possible value, and long may its prosperous career continue. (Hear, hear.) I should be sorry for the Cornishmen who felt the slightest degree of pleasure because of anything of an adverse nature which could or has happened to Dolcoath. The splendid mine and the splendid management, and everything connected with it is enough to excite the pride of any Cornishman. (Applause.) Now, gentlemen, with regard to the future, the call which we shall have to make will be a very small one. Our great object, of course, is to sink the engine shaft with as great dispatch as we possibly can, and I am glad that Captain Thomas keeps that object so prominently in view, for he says he feels certain of success. And that success is not in the distant future, that success is in the near future, and, gentlemen, I would venture to predict that we shall not have long to wait now before we shall be issuing dividend cheques in this company. (Applause.) I have very much pleasure in proposing "That the statement of account and manager's report now presented be and are hereby received and adopted."

Mr. G. COULTER HANCOCK, in seconding, assured them that the printed statement of account was perfectly correct. He knew that of his own knowledge, and to see that they had a balance in hand of £144 18s. 11d., with no liabilities due, was very gratifying to them all. With regard to the prospects of the mine, the manager had so fully explained the true position, that there was nothing for him to say, except that he firmly believed everything that he had said. He had known the property for a great many years, had studied carefully the plans, and, looking at the position of the Pink lode, with its relation to Chappel's downright and other lodes, and droppers going into it, if ever a mine was certain to be successful it was that one. (Hear, hear.) There was nothing to prevent it that he could see; and, as had been already stated, it did not take the form of a speculation, in the usual acceptance of the term. They saw rich stones of tin which had only quite recently been found in different points, Chappel's downright and the crosscut north, and when they saw those droppers going down on one of the main lodes of the district, like the Pink lode, surely they might fairly expect to have immense riches at the junction. (Applause.)

Captain HARPER, the agent of the mine, said he could speak more of practical work of fixing the angle bob, for he had had the charge of the work. It was a hard, difficult piece of ground to get through; and being so near to the downright shaft, they had to be all the more careful to avoid doing damage; but they did not break so much as a plank. It was working very successfully, and was fixed right to the 26. They were pushing on that shaft as fast as possible, and the ground was now very favourable for sinking, at the rate of 4 fathoms a month. But they would now put on three boys with the shaftmen, and hoped to sink at the rate of 5 fathoms a month. (Hear, hear.) The crosscut was looking remarkably well, and the branches were looking as well then as on Wednesday, when the West Kitty agents were underground. The conditions now were exactly the same as existed in the old mine, which was so productive. He went into the old mine at the adit level to the workings on the Pie lode, which had all been taken away. The same thing applied to the Southhouse lode and the Northhouse lode—it had all been taken away by the old men. If that was the case in the old mine, he saw no reason why they should not have the same success in the present working, seeing that the same droppers were coming in on their lode. He thought they had a perfect right to suppose that they would meet with success; it was almost certain, as far as they could see through that ground, Eastward, on the Pink lode, they seemed to have got through the run of mundie. They had driven through it for 30 fathoms, but an entire change had now come over the lode. Some 3 or 4 fathoms back from the present end they had put up a rise about 3 fathoms, and the lode was better than when they started at the back of the level. In the eastern end the lode was 4 feet wide, but not quite so good as in the rise; the last parcel of stuff was worth about 18 lbs. of tin to the ton. From the end they had now about 20 fathoms to the great crosscourse, and it was a very important piece of ground to drive through, though at the present moment they would have to concentrate their operations, more particularly at the shaft and the cutting down towards the junction, and he thought that if they were able to push on as they hoped, they would have something grand to show the shareholders at the end of the next four months. (Applause.)

The CHAIRMAN: The rise is up about 3 fathoms, and the lode in that rise will now produce about 40 lbs. of tin to the ton.

Captain HARPER: Yes; from 30 to 40 lbs.; it will average fully 35 lbs.

Captain HOOPER (West Kitty) said that with his colleague, Captain Williams, he went underground on Wednesday, and was highly pleased with the work that had been done in the last quarter. The bob was working as well as anyone could wish, and the ground in the shaft was now looking more easy for sinking and more favourable for tin. He should say that they could sink from 4 to 5 fathoms a month from the appearance of the ground. Driving north was a very important matter. He worked in that mine when he was a very small boy, and remembered seeing very large quantities of stuff raised there, an rich stuff too, simply from the

branches of tin. There had been thousands of tons taken away from branches, and now these branches were all coming down on the course of the lode. These branches dropping down were bound to make tin at the junction; he had never seen any other result. He believed in pushing on the shaft with all speed, and that the agents were doing their best with that object. They were not troubled much with water, but when in a little while they got a little water, they had contrivances for dealing with it in a minerlike manner. The crosscourses very often made tin, and he was quite satisfied that when they got around the great crosscourse, they would be in an improved state. He believed that for many years after he was gone that there would be a grand mine in Polberro in depth, and the machinery fixed there was equal to putting down the mine 100 or 200 fathoms, if it was required. (Applause.)

Captain WILLIAMS (West Kitty) said the fixing of the angle-bob was a very good job, and great credit was due to Captain Harper, who had had the superintendence of the work. The main point, he thought, was to continually sink the shaft. Chappel's downright and Southhouse lode would drop into it, and if those branches in the north crosscut did not turn out good, he should be disappointed. He had never known anything in his life, situated as that was, but what it had turned out a very good thing. He should say, by all means keep on the eastern end driving towards the crosscourse, for he believed the ground on the eastern side had been very productive around the crosscourse. If the shaft could be sunk 4 or 5 fathoms a month, that was very good speed with hand-labour. He could remember when 20 tons of tin a month was being returned from those branches, and he quite endorsed what Captain Thomas and others had said about the splendid prospects of the mine. (Applause.)

The resolution was then put and carried unanimously.

Mr. PAYNE proposed "That to meet the requirements of the company for the next three months a call of 1s. per share on the shares of this company be, and is hereby made payable to the bankers of the company, Messrs. Bolitho, Williams, and Co. (Limited), late West Cornwall Bank, Truro, on or before Friday, February 1, 1895." It had been his (Mr. Payne's) lot a good many times to propose calls in that room, and he had never felt sorry for having to do so, for he could safely say that if ever he made a call with a feeling of certainty that he would have that money back again some day, it was in that case. There was no meeting he attended from which he went home with such a confident feeling that he was interested in one of the finest properties that he ever put his foot in, and he had been in a good many mines. He believed that before very long they would drop call-making, at any rate. He did not know how long it would be before the price of tin moved upward, but in any case he thought they would stop the calls within a few meetings. He should await with a great deal of interest the next meeting, for he thought the Chairman and the manager would be able to tell them of something grand in store for them. That was a very sanguine view to take, but he thought it was justified. There was no speculation about it now, for no one could see the rich stones of tin raised from the mine in the last few days without being convinced that they had a splendid property. (Applause.)

Mr. F. W. MICHELL seconded, with pleasure, for the sufficient reason that it would be applied to a most excellent purpose. He supposed almost everybody now was agreed that the junction of Wheal Rock, or rather the dropping down of Wheal Rock on West Kitty lode, was the cause of the great deposit of tin from which a quarter of a million sterling had been realised already in that mine. It seemed to him that similar occurrences to that might be looked for there, and he should not be at all surprised if there was another and as great a course of tin underneath the droppers in Polberro as there ever was in West Kitty, and that probably would last as many years. (Applause.)

The resolution was unanimously adopted.

Mr. ISAAC ROWSE then moved:—"That the best thanks of this meeting be and are hereby presented to the committee of audit and finance for their past services, and that they be re-elected."

Dr. WHITWORTH seconded the resolution, which was then put and carried unanimously.

The CHAIRMAN proposed—"That the best thanks be presented to Captain Thomas, Captain Harper, and Mr. Hancock for the very admirable way in which they have attended to the duties which have devolved upon them." He (the Chairman) never was associated with more able officials in his life, and it gave him much pleasure to say at that meeting that they seemed to do thoroughly everything that ought to be done.

Dr. WHITWORTH seconded the resolution, and it was carried unanimously.

Captain CHARLES THOMAS briefly returned thanks, saying he had every confidence in the success of that mine in the near future. It was a great comfort to come there and find that the adventurers had supported them in the important work which they had accomplished. (Applause.)

Mr. G. C. HANCOCK proposed a vote of thanks to the Chairman, remarking that no one that he knew of had done more for the mining industry of Cornwall than their Chairman—(hear, hear)—and he deserved their hearty congratulations and thanks. (Applause.)

Mr. PAYNE seconded the resolution, and it was cordially agreed to.

The CHAIRMAN, in acknowledging the vote, said he was very much obliged to them for the kind way in which they had passed that vote of thanks, and assured them that it was a very great joy to him to be there, and to preside at such a delightful meeting. The proceedings then terminated.

MACATE MINING COMPANY, LIMITED.

Paying off the Mortgage Debentures.—Better returns expected.

An extraordinary general meeting of the shareholders of the Macate Mining Company was held on Monday, at Winchester House, the chair being occupied by Mr. T. B. MILLER.

The SECRETARY (Mr. F. D. Lyell) read the notice convening the meeting.

The CHAIRMAN said: Gentlemen, those among you who have been present at former meetings of this company will, I am sure, join with the directors in their congratulations on the greatly improved condition of affairs we have to report. I need not trouble you with the history of the company, for you are, no doubt, familiar with it. Many, I think, felt that the £10,000 first mortgage debentures formed rather a heavy burden upon the capital of the company. Now, those mortgage debentures have to be dealt with in September of this year, and your directors are bound to consider the best way of doing this. Owing to the excellent condition of the mine as compared with past times, we are enabled to make a proposition to-day of a very beneficial kind, so far as the shareholders are concerned, and to which three-quarters of the debenture-holders have already signified their assent, so that it may be taken as *un fait accompli*. The debenture-holders have agreed to accept cash or shares at the rate of 50 per cent. premium on their face value—namely, 3s. for every 2s. share. We might, of course, have offered those shares to the debenture-holders, but we thought it fairer, especially to those who had been with us through the whole affair, to give you an offer of subscribing for those shares, and then to pay off the debentures with the cash so received. We propose to offer them *pro rata* in the proportion of one new share for every three held at present. That will dispose of about 70,000 shares, and, in order to make the transaction complete, we have arranged to dispose of the rest at the same price of 3s. per share. We shall thus clear off the heavy encumbrance of mortgage debentures, and there will be nothing remaining in the company but share capital. Having been a debenture-holder from the first, I would rather hold my debentures than be paid off, but still I have no doubt that the proposed arrangement is a very good thing for the company, and, therefore, the debenture-holders will agree to it. As to the present condition of the company, our latest advice

from the mine have been of the most favourable character. I may remind you that there had never been a question from the very first—and I was one of the original syndicate who had to do with the inception of this company—as to the soundness of the report that was made by our deceased friend, Mr. J. H. Torrance. He stated his firm belief in the value of the property; a syndicate was formed, and the money subscribed. Mr. T. O. K. to, the well-known mining engineer, went out and confirmed the report, and from that day to this there has never been a question as to the value of the mines. Difficulties have arisen mainly from the trouble we had in working and maintaining the ropeway necessary for the development of the mine, and also, subsequently, in connection with the reduction of the ore. All these difficulties we trust are now overcome, but, looking back upon the past, I confess I am very much surprised to be here to-day with this statement to make. We have been very nearly on the rocks several times. We have seen on more than one occasion a formidable list of bills for which we were liable, and which had to be met. I have no knowledge of mining, and perhaps less of Stock Exchange matters, and I daresay some of you will share with me a feeling of a little distrust of Stock Exchange methods; but if it had not been for the valiant support that some of the members of the Stock Exchange and their friends have afforded to the company we should not have been in possession of our mine to-day; because if one of these bills had been dishonoured there were people in Peru who knew the value of the property, and who were only waiting for the opportunity of seizing it. Our solicitor felt that our power over the mine, if once we had defaulted, would have been very small indeed. Well, we have capital to go on with. We have money coming in. We have, in fact, turned the corner, and are now placing before you a proposal which will free the mine of all prior claims so that the shareholders will thus be enabled to enter upon their benefits which will accrue to them. The Chairman then read an article on the mine by Mr. C. H. Dolby-Tyler, F.R.G.S., which had appeared in the *Valparaiso Western Courier*, speaking in highly favourable terms of the present condition and future prospects of the mine, and concluded by moving the following resolution:—"That the capital of the company be increased to £28,500 by the creation of 85,000 new shares of 2s. each."

Mr. PAXTON seconded the resolution. Mr. GIBSON thought the present time rather an unfavourable one for the increase of the capital, and suggested that they should wait for a return from the mine.

Mr. PAXTON explained that hitherto none of the returns had so far exceeded the current expenses as to enable them to make a profit. The reports, however, showed that such returns would not long be delayed, and, in the meantime, he felt sure the policy proposed was the best one.

The motion was then put and carried unanimously, and the meeting terminated with a vote of thanks to the Chairman.

JAY HAWK AND LONE PINE CONSOLIDATED MINING COMPANY.

Reconstruction agreed upon—Opinions as to the property.

An ordinary general meeting of the shareholders in the Jay Hawk and Lone Pine Consolidated Mining Company was held on Tuesday, at Winchester House, the chair being occupied by the Hon. ASHLEY PONSONBY.

The SECRETARY (Mr. W. J. Lavington) read the notice convening the meeting.

The CHAIRMAN said: Gentlemen, in rising to move the adoption of the report and accounts, you will allow me to go back a little into the past history of the company. You may remember that some considerable time ago Captain Pridenax met you and recommended that the mill should be removed, and that we should make arrangements for bringing a good water supply to the place where the mill was proposed to be erected. The road up to the mill and the other mines was extremely bad and difficult during the winter owing to the snow and the thaw, so that the cost of bringing the ore down to the mill was a very expensive, laborious, and, very often, an impossible feat. Captain Pridenax recommended that the mill should be moved to another site, and we had perfect confidence in his knowledge; and we sent out Mr. Lavington to see what was proposed to be done. Eventually the board decided to move the mill from the place where it was then erected down to a lower and more convenient position, where there was better accommodation as to roads and water. Captain Pridenax gave us an estimate, and assured the board that it would be possible to erect the mill out of the profits raised from the mines. Unfortunately, it happened in almost every instance that his estimates were under the mark, and I may also remind you that during these years silver fell continuously in price. The consequence was that on one side we received less money, and on the other incurred greater expense. Though we only had a small amount of money in hand to meet the extra expense, we did the best we could, hoping that the mine would turn out satisfactorily. Captain Pridenax came over to England several times, and on the last occasion he assured us that everything was going on as satisfactorily as could be the case, and that he had placed his brother, one of the most able millmen in America, in charge of the mine. We accepted that arrangement on the understanding that Captain Pridenax himself was going back to the mine, but he asked such an enormous fee that the board did not think they were justified in incurring it, and accordingly appointed Mr. Grothe to take his place, and to make a report upon affairs at the mine, which we considered had not been going on very satisfactorily. Not very long ago Captain Grothe met the shareholders in this house, and told them exactly what he thought about the mine. At that time, however, he had not had an opportunity of surveying the mines properly, and as soon as he returned to the mines he sent us a letter, in which he estimated that the present liabilities and works which he recommended should be done would come to about \$40,000, or £8000. In addition to this we had liabilities in England, and taking these matters very seriously into account, we soon arrived at the conclusion that it would be wise to recommend the shareholders to reconstruct, in view of the fact that our shares being fully paid up we had nothing to fall back upon. With regard to Captain Grothe, we all know he is highly spoken of, and I think he is a man who thoroughly understands his business. As to the mine, it is in a highly satisfactory condition, as you will see if you turn to the report, and the profit has been very considerable. The mines have cost a good deal of money, but the accounts, which are for two years, show a net profit of nearly £17,000, out of which the shareholders have already received one dividend of £7100, while the remainder has gone into the property and the mill, and to improve the water supply. We have had a misfortune in connection with the water supply, owing to the frost, and it has cost us nearly £1500 to repair the pipes. Mr. Grothe, however, explained that this would not recur, because he has made certain arrangements with air valves and other things, which will prevent the freezing or blocking of the water in the pipes. Mr. Grothe also believes that if he is supplied with a sufficient amount of money, the mine will become a success, and he explained that, if that money was not found, the company would only be raising for the benefit of the employed and others, without returning anything to the shareholders. The board have, therefore, thought it their duty to consult with the shareholders upon the matter, they being unanimously of opinion that the company should be reconstructed. The only matter on which there has been any difference of opinion is the question of making a sum of the liability on the new shares 1s. 3d. instead of 1s. so as to supply a little more money to go on with. Although the price of silver is such as to shut out most of the mines in America, we have been able to make a fair profit, the last return showing 1700 ounces, and the lode giving from 17 to 20 ounces to the ton. The Chairman concluded by proposing the adoption of the report and accounts.

Lieut.-Colonel R. C. H. GERMON seconded the resolution, which, after a very brief discussion, was put and carried.

On the motion of Mr. ALLEN, the auditors, Messrs. Bolton, Pitt, and Breden, were re-appointed.

The CHAIRMAN remarked that the directors had a very large interest in the concern, holding as they did between £60,000 and £70,000 of share capital.

Subsequently the meeting became special for the purpose of considering proposals to reconstruct the company.

The CHAIRMAN, in submitting the scheme for reconstruction, said it was proposed that a new company should be formed with a nominal capital of £285,000 in ordinary shares of £1 each, with power to increase and reduce such capital, and to issue any original or new capital on preferential or other terms. Under the new arrangement the name of the new company was to be the same or similar to that of the old company. The new shares were to be credited with the sum of 18s. 9d. per share as paid up, and to be distributed to the shareholders of the old company in the proportion of one share to each one held by them, the liability of 1s. 3d. per share being payable by instalments at certain specified times. The Chairman then moved:—"That the Jay Hawk and Lone Pine Consolidated Mining Company (Limited) be wound up voluntarily under the provisions of the Companies Acts, 1862 to 1867."

Mr. ALLEN seconded the motion. The Rev. Mr. SALMON proposed as an amendment:—"That this company be not voluntarily wound up, but under the direction and sanction of the Court."

The amendment was duly seconded, but on being put to the meeting it was lost, and the original resolution was agreed to, with two dissentients.

The CHAIRMAN then proposed:—"That, pursuant to section 161 of the Companies Acts, 1862, the liquidator be and he is hereby authorised to sell and transfer all the property and assets of the company to a new company, upon the terms and conditions of the scheme of reconstruction now submitted to the meeting and identified by the Chairman, and to enter into all necessary agreements for that purpose."

Mr. F. BREUER seconded the resolution, which was carried. A vote of thanks to the Chairman and directors terminated the proceedings.

LISBON-BERLYN COMPANY, LIMITED.

Election of directors—Satisfactory report from the manager.

An extraordinary general meeting of this company was held on Thursday at the Cannon-street Hotel.

General OWEN WILLIAMS, who presided, formally moved the confirmation of the resolution, passed on the 2nd inst., altering the Articles of Association.

Mr. DOBSON seconded the motion, which was unanimously carried.

Mr. DOBSON stated that Mr. Lane and himself were elected directors temporarily, after the gentlemen who were previously the directors of the company had resigned, for the special purpose of making such alterations in the Articles of Association as would enable the shareholders to place on the board of the company certain gentlemen whose presence was considered very desirable. Those alterations had now been made, and the purpose for which they had been elected having been accomplished, it only remained for them to withdraw. Before he and his colleague, Mr. Lane, had occupied seats on the board, they had no personal acquaintance with the affairs of the company, but during the time they had been on the board they had informed themselves of the position and prospects of the company. He, therefore, had very great pleasure in saying that from the plans, specifications, and documents which had come before their notice, they were more than convinced that they had a most valuable property. (Cheers.) They had a vast extent of country extending for many miles, and he had no hesitation in saying in that territory there were valuable deposits and minerals. The returns they had on Monday last from the manager were highly satisfactory, and very much in excess of anything that they had ever seen before. He was convinced that the whole of the disasters which had affected the previous career of the company had been due to one cause—namely, the inefficient management. He was happy to say that that state of affairs would prevail no longer, for he believed they would now have upon the board one gentleman of very great skill in the management of its affairs, and under whose auspices he had no doubt whatever that the company would attain to a very high degree of success. (Cheers.) He did not know anything of Mr. Nicol Brown until the other day, but he was bound to say, after conversations he had with him, that Mr. Brown struck him as being a man of clear judgment and very great business aptitude. Moreover, the manner in which he explained to him that he managed the other companies with which he was connected proved to him that he had a thorough grasp of the subject, and certainly he did bring to bear on the management of the mine an amount of intelligence and system which he had never seen before, and which could not fail to be productive of very great success. He added that he considered the company was under a debt of gratitude to Mr. Landau for having brought about the change of management. (Cheers.) There was another matter which he must allude to, and that was that some legal proceedings were being taken against the company as to the legality of the previous meeting. It puzzled him to know what ground there could be for any such application to be made to the Court, as everything done by the shareholders' committees had been done in strict accordance with the Articles of Association. Whatever the result of those proceedings might be, the yield of ore from their property would not diminish, and, therefore, he hoped the shareholders would not be alarmed by those proceedings.

Mr. STEVENS enquired the nature of the proceedings. The CHAIRMAN, in reply, stated that certain people asserted that the proceedings at the general meeting on December 6 last were informal, and that Mr. Macklin and his board were still legally the chairman and directors of the company. (Laughter.) The Chairman then moved:—"That this meeting accepts the resignations tendered by Messrs. E. W. Lane and C. B. Dobson as directors of the company," and, in doing so, he said that both gentlemen had been exceedingly useful members of the board.

Mr. PROFFITT seconded the resolution, which was agreed to. Mr. HOLLAND then moved the election of Mr. Nicol Brown and Major-General Alexander C. Bruce, C.B., as directors of the company. He remarked that he fully endorsed what Mr. Dobson had said with regard to Mr. Brown. He did not think that there was any man in the world more qualified to carry this company to a success than Mr. Brown. Mr. Brown had a thorough grasp of the subject. He would be able at once to put a trained staff upon the property, and he was quite certain that he would in a very short period be able to indicate the value and resources of the company. He did not look upon the Lisbon-Berlyn property any longer as a mere battleship and shuttlecock of the Stock Exchange, but he looked upon it as an honest industrial enterprise. He believed he could satisfy them that the property was capable of paying at least £50,000 a year in dividends. They had a very large area, the value of which they did not know; but he believed within a short period they would know. They did know, however, that on the farms other than Frankfort Farm £36,000 worth of gold had been obtained by diggers, which showed that there must be some reefs there. They had treated 30,000 tons of ore from the Bevil's Reef, which had yielded 12 dwts. or 13 dwts. to the ton, and the outcrops of that reef extended for a distance of over 2 miles. In addition to that they had the Theta Reef, which Mr. Hodgins stated would yield 30 dwts. to the ton. There was an unlimited amount of ore here, and 50,000 tons in sight ready for stopping. He, therefore, considered he was justified in stating that they had a very valuable property.

The CHAIRMAN seconded the resolution, which was agreed to.

On the motion of Mr. LEE, a resolution was passed voting Mr. Dobson and Mr. Lane 50 guineas each for their services.

On the proposition of Mr. DOBSON, the meeting passed a resolution expressing the opinion that the board was justified in paying Mr. Landau a commission on the shares for which he had obtained an option.

In reply to a SHAREHOLDER, the CHAIRMAN stated that he anticipated they would be able to pay a handsome dividend by the end of the year.

A vote of thanks to the Chairman closed the meeting.

THE NEW WELSH SLATE COMPANY, LIMITED.

Fresh issue of debentures.—Mr. Roberts on the quarry.

An extraordinary general meeting of the shareholders in the New Welsh Slate Company (Limited) was held on Thursday, at Winchester House, for the purpose of passing resolutions approving an increase in the capital of the company. Mr. J. HOWARD, M.P., presided.

The SECRETARY (Mr. F. L. Clark) read the notice convening the meeting.

The CHAIRMAN, having explained that the meeting was held in consequence of a resolution passed at a previous meeting, on December 21, by the debenture-holders agreeing to a reduction in the interest on the debentures, said: We have considered very carefully what is the best mode of raising this money, and after somewhat anxious deliberation, we have come to the conclusion that we cannot do better than issue a further preference stock, which shall carry away the greater portion of the profits after satisfying the special claims in reference to the debenture interest, the sinking fund, and the 8 per cent. dividend. So far as the 8 per cent. dividend is concerned, the preference shares of both classes will rank *pari passu*, but the balance—the 42 per cent.—is to come to the preference shareholders. It may seem to be somewhat hard on the ordinary shareholders, but this is really an attempt to save the company from the process of the liquidation, the result of which would be the wiping-out of the ordinary shareholders altogether, and although we are very sorry for their position, as directors, we think we are doing the best we can for them by saving the liquidation of the company. In order to carry out this resolution, we have had to summon a meeting of the preference shareholders in order that they may allow us to place the other holders of shares on the same basis as they are themselves with regard to the 8 per cent. except that the new holders will not have an accumulative dividend over them. The result of that meeting, which has just been held, is that the preference shareholders have now, by the requisite majority, given us authority to pass the resolutions which you have heard read. The Chairman concluded by moving the adoption of the first resolution.

Mr. KING seconded the resolution, which was carried unanimously.

The CHAIRMAN then moved the second resolution embodying the proposal for the increase of the capital of the company.

Mr. KING seconded the resolution.

Mr. ROBERTS, speaking on the resolution, said: Gentlemen, having no authority to speak in the name of the board, which position can only be taken by the Chairman, I intend strictly to confine myself, as managing director, to a *resumé*—1st. Of the financial yearly results of the company's work. 2nd. The causes of the losses in early years. 3rd. The present condition of the quarry and 4th. The result of the last six months' working. First. The financial yearly results of the company's work. The balance-sheets of the company have not always been prepared on the same basis. In the following statement which I have drawn out, the basis is the same all through, and the figures show what the yearly results would have been had the same amount per ton been charged for maintenance, and the same sum for depreciation of buildings, rolling-stock, &c., as was done in the last annual balance-sheet of July, 1894, when experience led the directors to write off more for maintenance, and charge less mining cost to capital account. In the following figures, £2000 per annum debenture interest is not taken into account, as I want to show the real quarry result apart from interest:—

	Tons.	Loss.
January to July, 1889.....	3006	£2541 17 8
		or 5083 15 4
July to July, 1890.....	6299	2546 1 1
" " 1891.....	5944	2532 2 3
" " 1892.....	6870	969 3 0
" " 1893.....	7330	1825 13 1
" " 1894.....	6906	1350 14 7
July to December, 1894.....	3269	estimated 1500 0 0
January to July, 1895.....	2000	3500 0 0

or a difference of £2583 per annum under liquidator, or £6046 compared with the year the company took possession. Second. The causes of losses in early years. There is no doubt that when the company took possession, the existing chambers had been far more worked out than was thought to be the case. The production in many parts of the quarry was, I believe, being carried on at a loss, and development was not nearly enough ahead of the chambers. Consequently, much was required to be spent to maintain the production, let alone increasing it. A considerable part of the production came from bargains worked in fallen chambers. I find with regard to the lower quarry that in the financial year ending July, 1891, every 100 tons of rock moved from chambers producing slate made 548 tons of slate; in 1892 every 100 tons of rock moved from chambers producing slate made 596 tons of slate; in 1893 every 100 tons of rock moved from chambers producing slate made 637 tons of slate; in 1894 every 100 tons of rock moved from chambers producing slate made 734 tons of slate; whilst in the last six months of 1894, being the first half-year of our present financial year, every 100 tons of rock produced 794 tons of slate, or almost 50 per cent. more than the 548 tons produced in 1891. No wonder that, although the output has scarcely varied, the quarry has year by year shown more and more satisfactory results, though the net results have also been somewhat dependent upon a regular rise in price, which, however, has been partly counterbalanced by a rise in the cost of labour. Further, in my opinion, one great cause of the long period of unprofitable working has been that money has not been spent quickly enough to raise the output rapidly, and thus relieve the small tonnage of the disproportionately heavy dead expenses and debenture interest. Had we three years ago opened another floor in the south vein as we commenced to do in 1890, and then suspended it till last year; had we sunk another floor on the north vein as we ought to be doing now, but have not begun, making all the necessary alterations of inclines to meet the increased tonnage; we should be in a really prosperous state to-day, but the capital at our command has never after the first year been sufficient to enable us to take a really vigorous and decided policy, and in the future, when the further capital is raised, if more pressure is not put to open quickly, my opinion is that the result will be far less satisfactory than the additional capital will warrant. We have plenty of ground before us, and we ought not to rest till we are producing 800 tons, and thus putting ourselves in a position to meet any fall in prices, as with such an output we could always be sure of earning mortgage interest at least even in the worst times. The following figures will show what I have alluded to. If in each year we had written off to maintenance what we did last year, and which we now consider necessary, we have only spent the following amount upon the quarry as regards capital expenditure:—1889-90, £4659; 1891, £2751; 1892, £1093; 1893, £2001; 1894, £2732; six months ending December, £13,911. The sum which in our prospectus we said we considered necessary being £15,000, spread over three years. We have, therefore, been six years spending £14,000, and meanwhile have paid about £12,000 in interest and the cost of six years' management, instead of £6000 and the cost of three years' management.

The above is apart from machinery or rolling-stock. Third. The present condition of the quarry. I have touched upon the improvement in the quality of the rock, but there is another important point to be borne in mind. I find that after charging the amount to maintenance, upon which the last balance-sheet and all the above figures have been based, that there was a capital expenditure of £2400 on the quarry itself during the 18 months ending last December. Of this fully £1700, and, I think, nearer £1900, was spent in opening floor D south, and sinking down to E. This expenditure, so far, has been unproductive, but every month now we shall feel more and more the results of it; whilst as to the selling price of slates, I can only say that it tends still further upward, and if the present demand lasts it will be impossible to keep pace with it amongst the Welsh quarries. I saw in the paper last week that three quarries are being restarted, but new quarries take a long time before they can produce enough to make any impression on the production of upwards of 400,000 tons per annum, even if they have the quality of slate which would compete with ours. It is a time for opening and not closing quarries. I take further note in this report with regard to Mr. Owen's remarks. Under these circumstances, the board have thought it advisable to obtain a report from their surveyor, Mr. D. Prichard, which I hope to receive in a few days, and, subsequently, the directors have asked Mr. C. Warren Roberts, A.Memb.Inst.C.E., the manager of Messrs. Greaves' quarry, which is probably the most scientifically worked in the district, to report upon the lower quarry. These reports will be printed and circulated when the shareholders are asked to subscribe for the new shares, and I have not the slightest doubt that they will entirely substantiate the view I take of the quarry. I believe Mr. Warren Roberts has never been inside our quarry up till now. I must add, with regard to Mr. Owen's report, I do not consider that an expenditure of £1500 per annum on development is at all the largest sum which can profitably be spent during the next year in addition to the above £1400 a year we are at present spending. I have not gone into this figure with Mr. Owen, and do not know, except from the report, how he arrives at it, but it appears to me he has not included opening floor F, north vein, which, I think, should be commenced on the doubling of the north, which is necessary if we are to have a large quarry in the future. Fourth. The results of the last six months' working. The make for the last six months has not shown much average improvement, but the results are very satisfactory compared with previous years. The great improvement in the quality of the rock, and higher prices, have, as shown by the monthly cost-sheets, given a profit of upwards of £1500, based upon the same deductions for depreciation, &c., as in the 1894 balance-sheet, before payment of debenture interest—and I challenge the directors, who have full opportunity of checking these monthly figures for themselves—to deny the above or this other fact that, at present prices if the quality of the rock remains the same, and also the output as in the last six months, the profit will on the above basis be £2000, which, making in all £3500, will give a surplus of £1500 for the year, after meeting the proposed debenture interest and sinking fund. I have no hesitation in saying that I have no doubt that the accounts for the six months when added will confirm the above figures. Under these circumstances, when proposing to issue more capital in such a form as will practically extinguish the holders of ordinary shares, if they do not take up their proportion of the new capital, I consider it the clear duty of the directors to state plainly the present position of the quarry, and to obtain a clear statement what it will be if the further capital is raised and expended, and if my co-directors object to these statements, it is for them to point out any error they find have made, otherwise they must be held to endorse my figures and remarks. As regards the future, I have shown what we are at present doing with present rock and present prices, and I consider it is for the quarry manager to clearly inform the directors what output he can obtain if further capital is provided. I can give a shrewd estimate of the financial results probable with an increased output, and I can assure you that we can sell without difficulty any possible increase of make.

The CHAIRMAN said he was glad the information contained in Mr. Roberts's statement had been given to the shareholders. A good deal of what he had said, however, would demand further consideration.

Mr. BRAITHWAITE thought 42 per cent. rather an exaggerated sum to mention, and thought one rather smaller would be better.

Mr. ROBERTS pointed out that the only alternative to the proposal of the directors seemed to be liquidation.

The motion was then put, and carried unanimously.

A further resolution, regulating the issue of preference shares, having been unanimously carried, the proceedings terminated.

BRITISH SOUTH AFRICA COMPANY.

Exhaustive speech from the Hon. Cecil Rhodes.

The fourth annual meeting of the shareholders of the British South Africa Company was held yesterday at the Cannon-street Hotel, the chair being occupied by His Grace the Duke of Fife, K.T.

The CHAIRMAN, in his opening address, regretted the absence, owing to ill-health, of the President, the Duke of Abercorn, and explained that the date of meeting had been delayed by business of an important and pressing character. Twice during the past year they had met together at moments of great anxiety and trial, when fighting was going on in the company's territory, when financial arrangements of a complicated character were pending, and when the outlook seemed full of doubt and difficulty. At the same time they found themselves exposed to the criticisms of a small and prejudiced section of the community—(applause)—while they only received a lukewarm support from many who ought to have known better. To-day, however, they stood in a position far superior not only to any they had previously occupied, but also to any they had ever hoped to attain. (Applause.) In founding the British South Africa Company they undertook the occupancy and development of a considerable extent of valuable territory in South Africa. Others were eagerly looking out, ready to step in and appropriate the valley of the Zambesi and the adjacent territories, as already they had appropriated other portions of the Dark Continent offered to this country, but which the Foreign Office had either disclaimed, or been afraid to accept. (Applause.) Thus, owing to the far-seeing action of a few men connected with the company, this enormous territory was secured to Greater Britain. The perfectly legitimate objections of some people to chartered companies were answered by the certainty that in no other method could this vast territory, in extent equal to Central Europe, have been brought under British sway, for the Parliament was certainly not at that time disposed to undertake so vast a responsibility. It remained, therefore, to be held by a mere handful of Englishmen, and was so held by them for four years by the mere prestige of British name, and without the firing of a single shot in anger. Unfortunately, it had subsequently become necessary to curb the raiding propensities of the Matabele, and to teach them that the *pax Britannica* could not be broken, but the war which followed and caused the downfall of Lobengula, and the complete annihilation of his power, was short, and, therefore, merciful, decisive, and therefore, likely to conduce to a permanent peace. Besides that, it evoked the heroic qualities of the Englishmen who took part in it. Passing on to deal more closely with the present position of the company, His Grace said: Turning now to this report, the first subject which will strike your attention is—as it should be in a new country—the development of railway communication. This has been systematically pursued from the two opposite extremities, so that lines running north from Cape Town over existing Cape Colony and Bechuanaland railways will ultimately meet the lines running west from Beira over the

Portuguese territory, and form an alternative route from Bulawayo to the sea. The progress made this year has been of such a character as to ensure the success of the whole, the southern line having pushed north from Vryburg to Mafeking, and the western line having crept west from Beira to Chimololo, through the Fly Country, while arrangements have been made for further progress from both points. There is much to be said on those postal and telegraphic communications which follow close upon, when they do not actually precede, railways. They have played a vital part in our work, but I will leave that subject, for reasons you will all appreciate, in other and abler hands. When the war was over, it became necessary to agree with the Imperial Government as to the future administration of the territories brought under the rule of the company—that is, the whole of our field of operations south of the Zambesi; and in May last an agreement was signed vesting the government in your company. The terms of the agreement have been made public, and are well known. It may, perhaps, be best described as establishing a position somewhat analogous to the administration of a Crown colony. The government is in the hands of an Administrator appointed by us, and he is assisted by the advice of a Council of five, nominated by the company. A High Court has been established, presided over by an able and experienced lawyer, formerly in the service of the Crown as Commissioner in Bechuanaland. A Land Commission was also appointed to provide for the settlement of the natives on the land, and to give them adequate rights. In July last Her Majesty, by an Order in Council, granted the needful powers for carrying out our agreement, and thus there is already, I am glad to say, a settled government, and the whole of the sphere has been brought under civilised rule. When we remember that this country four years ago was mostly a trackless desert, I think we may claim that your company has accomplished a task worthy of the best traditions of the greatest colonising power in the world. Looking now to the country north of the Zambesi, the company's administration was extended in February, 1891, over that enormous tract of country lying between the Portuguese settlements, German East Africa, and the Congo Free State, a vast district which is now designated as British Central Africa. Her Majesty's Government at the same time declared a Protectorate over Nyasaland, our company agreeing to contribute funds for the cost of government, and Mr. H. H. Johnson being appointed to act for the Crown in Nyasaland and for our company throughout our northern territories. Since we last met in this room—indeed so recently as November last—a fresh agreement has been made with the Imperial Government under which the company assumes at midsummer the direct active administration of these northern territories. You will be glad to hear that the company is to be relieved of the cost of the government of Nyasaland. Under these most important arrangements our powers and rights are confirmed and defined over a vast and fertile region, in many parts suitable for a white population. The French explorer, Mons. Dole, did not hesitate to describe the Chartered Company's lands as "the pick of Central Africa on both sides of the Zambesi." Gentlemen, I fear I have detained you already too long and will ask you to allow me to leave the full exposition of our commercial position in the more competent hands of my friend and colleague who sits near me. I will only make two remarks on that part of the subject. The first is to express the gratification with which your board of directors received the temperate and satisfactory report of that eminent expert, Mr. J. H. Hammond, upon our mineral resources. The second is to point out to you that even before our mines have reached a stage of development great enough to cause a large inflow of population, the shareholders may congratulate themselves on the satisfactory outlook of the Matabeleland finances. You are aware that our financial year ended on the 31st March, 1894, but we are now in possession of the results of six months of the current year. If, as is the case, the difference between expenditure and revenue south of the Zambesi was less by one-half in 1894 as compared with 1893, there is every reason to believe that for the year ending March 31, 1895, our receipts will have overtaken, and, hope, more than covered our administrative expenditure. (Applause.) And now, gentlemen, I am going to ask you—though surely it is hardly necessary to do so—to give a hearty reception to our managing director, Mr. Cecil Rhodes, for although it cannot, perhaps be said of him as of a distinguished American, that he has made a nation, he will stand foremost amongst the makers of Greater Britain. (Applause.) I am no less sure that you will give a no less enthusiastic reception to our Administrator, Dr. Jameson, who under circumstances of unparalleled difficulty displayed an ability and energy that it would be impossible to over-estimate. I am sure, gentlemen, that it will always be a pleasure to you, as it is to me, to have been associated in however humble a degree with this great company, which has added two immense provinces to the British Empire, and has carried civilisation, industry, and commerce into regions where they were hitherto unknown. I now beg to move the following resolution:—

That the report on the company's affairs for the year ending March 31st, 1894, and the balance-sheet showing the position of the company at that date, laid before this meeting, be and the same is hereby approved.

Earl GREY seconded the motion, giving at the same time expression to his conviction, founded on personal trial, that there were vast territories under the company admirably adapted for British commerce, and containing wealth of an incalculable amount. (Applause.) Few even among those present were able adequately to realise the extent and value of the possessions acquired by the company. He had learned enough during his recent tour through Matabeleland and Mashonaland to feel confident that at no distant date they would become two of the richest of the Crown colonies. There was every reason for them to be satisfied with the progress made during the past year, and this was an additional reason why they should feel grateful to Mr. Cecil Rhodes and Dr. Jameson.

The Right Hon. CECIL RHODES, who was received with loud cheering, said—My Lord Duke, ladies and gentlemen: I have to thank you very heartily for the reception you have accorded me. Probably you would most desire that I should deal with the practical part of the company's development in Matabeleland and Mashonaland, for the English are a practical people; they like expansion, but they like it in connection with practical business. I could hardly refer to these matters without alluding to our late war, and I may tell you very frankly that we either had to accept that war or leave the country. I do not blame the Matabele. Their system was a military system, and incompatible with the peaceful development of the country, consequently we had to try issues with them, and they came to a successful issue so far as we were concerned. I may make one other remark with reference to that war—that I refer to the men who took part in it as political adventurers is a mistake. You will easily understand that, however bad times might be, you would not risk your lives unless there was something at stake worth more than the simple chance of obtaining a farm valued at £50 after the war was concluded. What was it, then, that caused the people to volunteer so readily? They had adopted this new country as their home, and they saw very clearly that unless they tried issues with the Matabele they would have to leave it. That is, I think, the best answer to the charge that those who took part in the war were simply actuated by a desire for lucre. Now, in looking at the position of the company, we have to consider what we possess, and I may say that we possess a very large piece of the world. We have taken over the administration of the lands north of the Zambesi—excepting the Nyasaland Protectorate, where we have considerable rights as to minerals—and the whole of the lands and minerals belonging to the Chartered Company. We have, however, been relieved of the cost of the administration. Her Majesty's Government and the British people have at last felt it their duty to at least pay for the administration of one of their provinces, and we have a very fair reply to the Little Englander, who is always charging the chartered companies with increasing the responsibility of the Government, and then, when in difficulties, always appealing to the Mother Country for help. Our reply would be, that the boot is on the other leg. For four years we have found the cost of the administration of one of Britain's own provinces

when the Government were unable to face the House of Commons, and ask them to contribute to the discharge of these obligations. That is, then, the position with reference to the north of the Zambesi, and I may say in reference to that part of our territory that there are very promising reports in regard to it. It is a high, mineralised plateau, and it is a part where Europeans can live. Passing south of the Zambesi, we come first to Mashonaland, and then to Matabeleland, where in the past we have had great difficulties in contending against the Mashonas. At the present moment, there is a civilised Government over the whole of these territories. From the sentimental point of view, I may say that I visited these territories the other day and saw nearly all the chiefs of the Matabele. They were all highly pleased, and naturally so, for in the past they had always had to walk extremely delicately, because anyone who got to any position and riches in the country was "smelt out," and lost his life. Under those conditions you can understand that life would not be very pleasant. So far as the bulk of the people were concerned they were not allowed to possess any property. Now they can own anything, and walk no more with the fear of death before them. We are now occupying that country, and I think we are administering it fairly. More southerly still—in the Bechuanaland protectorate—we possess the whole of the minerals of Khama, and, further, what I may term a negative right to the land and minerals so far as Mafeking. What I mean by the word "negative," is that from Mafeking, throughout the whole of the Protectorate, since the granting of the Charter, no one has a right to obtain any concessions from the natives except from the Chartered Company and, therefore, we may say, that positively and negatively we possess the land, mineral, and administration rights from Mafeking to Tanganyika. This country is 1200 miles long and 500 miles broad, and in regard to it I see no reason to apprehend any future difficulties with the natives. We have now a satisfied people throughout the whole territory, and have now arrived at that point where we can deal with the peaceful development of the country. (Applause.) Now, you may very fairly ask what these possessions have cost us. Your position is somewhat as follows: You have a share capital of £2,000,000, and you have a debenture debt to-day of about £650,000, and I may point out you, that as against that debenture debt you have paid for the hundred miles of railway in Bechuanaland, you have 1400 miles of telegraphs, you have built magistrates' courts over the whole of your territory. Now, we may fairly say that if we were to put aside the Mafeking Railway and the ground you hold in the Crown Colony of Bechuanaland, as apart from the chartered territories, your debenture debt might be fairly taken at about £350,000. So that, from a purely commercial point of view, we possess a country, roughly, 1200 miles broad by 500 miles wide with a debt of about £350,000. The next question is—What is the opinion of the people living in the country as to its prospects? The only test on this point is the value of the townships, which were sold from time to time, because we have here the judgment of the individuals. A stand, which fetched at our stand sale £160, was sold yesterday, or the day before, according to a telegram I have just received, for £3000. (Applause.) This shows the confidence reposed by the people in the country. The next question is as to the cost of the administration. Of the ultimate future of a country mineralised like that which we possess there can be no possible doubt. But we have to consider what are the immediate prospects. In connection with this, you will have examined the reports, but I can tell you, perhaps, more simply how things stand. We have a revenue now of about £50,000 a year, and we have to expend about £70,000 a year. In this £50,000 revenue I have not included the sale of "stands," which I regard as capital. Therefore, this being the financial position, I think I am justified in thinking that there is every prospect in the near future of a balance between revenue and expenditure being effected—(cheers)—because it should be borne in mind that the revenue referred to includes no claim licences and no hut tax—two important sources of revenue which might have been drawn upon. Yet, without these, as stated, income and expenditure very near balance already. Moreover, it is to be remembered that this same expenditure includes the cost of a force of 200 police, an item which, so far as I can see, there will be no necessity to increase. All the administrative appliances are complete. We have magistrates in every town, a judge, a legal adviser, a Council, and an Administrator, and no further expenditure is to be anticipated. For that reason I ask for no increase of capital. (Cheers.) In the future we can have no more wars (Hear, hear.) There are no more people to make war against. (Laughter and cheers.) As to public buildings we have most excellent ones in every town quite equal to the ordinary public buildings in Cape Colony. As to telegraphs, every town is connected with the system, and to railways, they have been extended in every direction, and will be developed further just as fast as the country can prove they are needed by supporting them. Until they are required the people will have to do as in former days at Kimberley—use the wagon routes. Thus we have maintained our position. We have a complete administration; we have built railways; and it is difficult to see where fresh expenditure can be needed. That is to say, the company at present is almost paying its way with its two millions of capital, and I can see no reason why in the near future the concern should not make both ends meet, paying interest on its debentures without any increase of capital. If the country was a failure, we had better not increase the capital, while if the country is a success, the increase will not be required. (Cheers.) The next question to be asked is, "What are our prospects?" Looking at that question, I can only say I have been through the country, and from an agricultural point of view I know it is a place where white people are going to stay—it is a good agricultural country. With reference to the climate, I have been asked by some, "Isn't it a fever country?" Nothing of the kind. It is a high, healthy plateau, and I would as soon live there as in any part of Southern Africa. Of course, on the one side towards the Portuguese territory, in the low country, it is unhealthy; but on the high plateau it is perfectly healthy. But, of course, the main point we must look to, in so far as a return to the shareholders is concerned, is the question of the mineralisation of our country. (Hear, hear.) Now, in dealing with that question, I may remind you that you have got a country about 1200 miles by 500 miles, which is mineralised, and, so far as the efforts at present made go, you have in connection with the search for minerals 40,000 claims registered with the Government of the country; that means about 2000 miles of mineralised quartz. I would refer you, gentlemen, to the report of Mr. Hammond, who went through the country with me and is consulting engineer of the Gold Fields Company. He was highly pleased with the country. The mineralisation of the country is quartz, and not alluvial, and we could not get any batteries in practically. But the four years that we have been there prove to us that the whole country is mineralised from end to end, and in connection with the discoveries that have been made, I think I am justified in stating that such have been the reports made by those connected with these discoveries, that nearly three-quarters of a million of money has been subscribed lately for the development of them—(cheers)—and that not by puffing prospectuses, but privately, by the friends of those who have gone out and have had reports upon what they have discovered. (Cheers.) Matabeleland and Mashonaland will be a gold producing country, because it would be contrary to Nature to suppose that a country that is mineralised from end to end should not have payable shoots. I will not say anything more about the mineral question, but I would warn you not to discount possibilities as if they were proved results. Now, gentlemen, I think on this occasion you cannot accuse me of not dealing with the commercial aspect of the country. We have to consider next that we are a Chartered Company, and, therefore, we are connected with the political position of the country, and I may say that is most satisfactory. We had a good many enemies before, but these difficulties are all now over. You must remember that we shall pass from a position of charter administration to self-government when the country is occupied by white people, especially by the English. I thought it a wise thing to put in the constitution that the present tariff should not exceed the present Cape tariff, which was a revenue tariff, and not a protective one. I thought if we made that part of our constitution in the

"...nor we shall prevent a most unfair treatment of British trade, and a most unjust thing to people of a new country. Now you will be surprised that proposition was refused, and I will tell you why; because it was not understood. People thought that that was a proposition for a preferential system. It was really a Free Trade proposition and not a protective one. A proposition came from home that I should put in the words 'that the duty on imported goods should not exceed the present Cape tariff.' I declined, and for this reason, because I thought that in the future—say 25 or 50 years hence—you might deal with the United States as you would with a naughty child, saying if you will keep on this system of the McKinley tariff and increase it for a period we will shut your goods out. That is why I object to the introduction of the words 'imported goods,' and wish to put the words 'British goods' in the place of it, because England in the future might adopt this policy and yet have a clause in the constitution of one of her colonies which prevented it. (Cheers.) I hope in the ensuing Election you will do your best to see my clause carried; because by doing that you will be doing a practical thing, and taking the first practical step that has been taken towards the closer union of the Empire. (Loud cheers.)

Dr. JAMESON, who was most cordially received, having briefly addressed the meeting, laying stress on the fact that the mineral resources of the country had been proved, the motion for the adoption of the report was put and carried by acclamation.

The retiring directors having been re-elected, and the auditors re-appointed, the proceedings terminated with a vote of thanks to the Chairman.

WENTWORTH GOLD MINING AND INDIAN ESTATES COMPANY (LIMITED).—An extraordinary general meeting of this company was held yesterday at the offices, 34, Nicholas-lane, E.C.—Mr. Robert Ewing, who presided, moved the confirmation of the resolution for winding-up the company passed at the extraordinary general meeting held on the 2nd inst. at Cannon-street Hotel.—In reply to a shareholder, the Chairman said it depended on the amount they received on the sale of the estates what amount the shareholders would receive. The Chairman then put the resolutions, which were seconded by Mr. J. Labouchere, and carried unanimously.—Mr. Dixon proposed, and Mr. Booker seconded, that Messrs. Ewing and Labouchere be appointed liquidators, with a remuneration of 200 guineas each on the understanding that they waive all claims for fees as directors.—This motion was carried and the meeting closed.

MINING IN CORNWALL AND DEVON:

NOTES ON MINING IN THE WEST.

(BY OUR SPECIAL CORRESPONDENT).

WITH tin at £59 a ton there is naturally no improvement to be reported in the share market, though there is scarcely that feeling of despondency which a long-continued depression might have been expected to produce. Every now and then Cornish shareholders are encouraged by such optimistic speeches as that delivered by the Chairman at the Polberro meeting last week. Mr. Reynolds is of the same opinion as most of the gentlemen who have spoken in the county—that the chief hope of a rise in the price of tin lies in the prospect of a general revival in trade. But Mr. Reynolds goes further than most people have done in expressing the belief that we are on the very eve of a revival, and, in support of this, he points to the increased demand for stock in the railway market, securities which will feel a revival quicker, probably, than any others. Events on the Cornish share market seem to support to some extent this view of the situation, for within this last fortnight a fairly large number of Dolcoath shares have been picked up quietly by investors who evidently think they see means of making a substantial profit on the shares at their present phenomenally low prices. The buying that has taken place has been done quietly—under the rose, so to speak—at somewhere about £35 a share, the lowest price they have touched for very many years. It would have been considered low for Carn Brea not so very long ago. One thing is certain, when tin has seen the bottom, and the "bulls" and "bears" have finished their big fight, Dolcoath shares will be among the first to feel the reaction.

At Polberro meeting the shareholders were presented with reports of the mine of a very encouraging nature, and the meeting was most enthusiastic. The indications at the mine seem to be quite filling all the expectations of the executive, and, for once, the expected seems to be happening. It has been the almost universal experience in Cornwall that where productive branches of tin have been found dipping towards the main lodes, the junction has proved to contain a valuable deposit. At Polberro several branches containing splendid stones of tin, some of which were open to the inspection of the shareholders, have been taken from the branches which are going down with every indication of considerable riches at a greater depth. The next four or five months will prove the value of at least one of the junctions, and the result will be anticipated with much interest. The general opinion is that Polberro will turn out a very good second to West Kitty.

WHEAL BASSET meeting, on Tuesday, is likely to be a more cheerful gathering than some Cornish mine accounts have recently been, thanks largely to the energy and ability of the manager, Captain James. After a long period of call-making, the shareholders will be allowed a further breathing space, for the executive, for the second time in succession, have contrived practically to make both ends meet. The loss on the three months has been less than £150. Their difficulties, particularly in regard to water, have been enormous, but Captain James has succeeded in keeping the mine dry, thus enabling the rich ground at the bottom to be broken. The mine seems to be opening up very well indeed. Captain Frank Oats, the largest shareholder, will probably be present, and we suppose he will have something to say in reply to Mr. Strauss's remarks on the discovery of tin in Swaziland. There seems, however, no necessity for Captain Oats to take much notice of Mr. Strauss's remarks, for they are apparently practically agreed that the competition of South Africa is not likely to be very serious for some time to come, at any rate.

It is rumoured that Captain Oats is inclined to favour a scheme of amalgamation with South Frances, if a satisfactory basis could be arrived at; but it is scarcely likely to assume a definite shape at the forthcoming meeting. There is a good deal to be said in its favour, chiefly as a means of settling the water trouble. They are adjoining mines, working in the same main lode, and the chances are that there would be a considerable saving in the standing charges. The scheme, however, is in the air at present, and will require a good deal of consideration before definite terms can be arranged.

The list of applications for shares in Moore's Rhodesia Concession (Limited) will close not later than noon to-day (Saturday), January 19.

CORRESPONDENCE.

We wish it to be understood that we do not hold ourselves responsible for, and do not necessarily endorse, the opinions of correspondents. All communications must be accompanied by the names and addresses of the senders, though these need not necessarily be published.

PERSIAN MINING AND METALLURGY.

TO THE EDITOR OF "THE MINING JOURNAL."

SIR,—I much regret that absence from England prevented my being present at the meeting of the Institution of Mining and Metallurgy, when Mr. Mactear read his most instructive paper on this subject; and I am, therefore, compelled to throw myself upon your mercy for a little space in your columns, as having had the great advantage of accompanying Mr. Mactear upon a great part of his journey. I can fully confirm his statements as to the existence of many minerals, especially gold, which would be well worthy of exploitation were they in a country with better transport facilities, and under a strong and progressive Government. On the point of the difficulties met with from the weakness of the central Government in outlying portions of the country, I can perhaps speak with more experience than Mr. Mactear, who, travelling as he did under the personal *exequatur* of His Majesty the Shah, did not meet with so much opposition from the petty governors and village chiefs as did the engineers of the company who had to carry on work in these places, although he doubtless remembers his adventure with the Savids of Amirabad.

Although the corporation kept well within the terms of their concession, and their engineers were armed with letters from the Grand Vizier to the local authorities, instructing them to give every assistance, they were met with great resistance, occasionally active, but more often of a passive kind, but always of such a character as to make work well-nigh an impossibility. Every little village claimed all the minerals, the timber, the water, the grass, and even the sage brush used by the company's employees as firewood, in its vicinity and extending to the next village, and both the village chiefs and priests (Mollahs) expected to be bribed to allow anything to be done, and either blackmail had to be paid, or operations were continually interrupted. False and frivolous charges were brought against our native employees, wood-cutters were beaten and driven from their work, supplies of any sort were refused at any price, and so threatening were the people at times that it was only by the exercise of tact and firmness that our little band of Englishmen were preserved from attack. The above remarks refer more particularly to operations in North-east Persia, the Governor being weak, and having little control over the petty officials and village chiefs, while in the Afshar district in North-west Persia, where the Governor was a strong one, and well affected towards the company, all these difficulties were minimised or done away with. I believe, however, that further south the state of things was much worse, one of the company's engineers being imprisoned and threatened with beating by the local Governor.

I was, I regret to say, not with Mr. Mactear on his visits to the Him Coal Mines, near the Semnan oil deposit, but I visited in his company all the other places he describes, and can confirm him in every particular.

In some respects the Ganjabad Lead Mines were the most interesting of the places visited, but I have little hesitation in saying that they will not interest the capitalist, for they belong to the by no means small category of deposits which, while they satisfy the small demands of the native workmen, could not profitably be worked by European methods. With reference to the natives working in places where candles would not burn, I have had, unfortunately, a large experience of the effects of black-damp (carbonic acid gas) and have known many lives lost in English mines from this cause, and I was much astonished to see how little the Ganjabad men suffered from this cause. The "mines" simply consist of tortuous passages bending backwards and forwards to permit of ascent and descent. I led the way of our party partly down one of them, and when we arrived within some few feet from the end my candle went out just as if it had been plunged into water. I relighted it five or six times, only for it to be extinguished at the same place, and then, knowing that if knocked over there one could not possibly be got out alive, I advised a hasty retreat to "day." And yet a young man was bringing out ore from this very place working without light.

Mr. Moresing doubted the existence of gold in Persia, though on what ground he disputed Mr. Mactear's statement of actual facts he did not state. Now, I would not for one moment pretend that there is the slightest ground for a "boom" in Persian gold mines, yet I can confirm Mr. Mactear's statement as to gold we actually found by panning at Kuhzar, and also as to the probability of other deposits being discovered if sought for. Gold was not one of the minerals covered by the concession of the Persian Bank, and hence no systematic prospecting for it has been done, and, therefore, the only places examined were those previously worked by natives as described by Mr. Mactear. That there is gold in the Kuhzar deposit does not admit of doubt, but the average amount is apparently small, although our time was limited, and hence the tests made were not conclusive, as the area covered by the deposit is extensive, but we actually found colours in, I believe, every panning. I cannot say for certain, my notes being in England.

The hills lying close behind the deposit are favourably situated for making reservoirs to collect the snow water, and thus use hydraulic methods, the deposit being probably too poor to pay for other means of working.

As regards copper deposits, that at Sokham, near Semnan, was much the most promising which I saw in Persia, and were it in any country with reasonable transport facilities would certainly be worth properly exploiting, especially if the petroleum deposit were worked, as that would get over the great fuel difficulty. The deposit is not a true fissure vein, but is an impregnation of the rock, and appears to extend over a large area. The deposit near Kuhzar has been described by Mr. Mactear, and I can add nothing to that description.

The deposits near Abbasabad belong to the category of those mentioned above as being workable by natives in native fashions, and will pay the small amount sufficient to repay the actual workmen for their labour, but will not pay for working by European methods with the necessary heavy outlay for machinery, and the large salaries necessary to be paid to induce Europeans to live in such places and all the difficulties of working so far from any base of supplies. The mineral deposits which come under this category are much more numerous than is usually supposed, and, did space permit, I could much enlarge on this subject. The copper deposit of Gurkhani was extensively worked many centuries back, tradition says 4000 years ago. The mineral appears to have been very fine strings and nodules of native copper, which can still be seen very sparsely scattered through the rock over a width of from 30 to 100 feet, while the run of the bed could be traced for miles, being eventually lost in the

Kavie or salt desert. The subject of mining in Persia is to me a most fascinating one, and but that I fear I have already occupied too much of your space, I could write much more. Hoping that you will insert this, I am, &c., T. TRAFFORD WYNN, Assoc. M.I.C.E., and M.I.M.M.

Kyatygin, Burma, December 6th, 1894.

MOZAMBIQUE COMPANY v. CHARTERED COMPANY.

TO THE EDITOR OF "THE MINING JOURNAL."

SIR,—Allow me to draw your readers' attention to the following remarks. The Chartered Company's capital consists of £2,000,000 in shares and £750,000 in 6 per cent. debentures, which at 50s. and par respectively, amounts to £5,750,000. The Mozambique Company has an authorised share capital of £1,000,000, of which only £400,000 has been issued, which, at 25s., amounts to only £500,000. It has no debentures authorised or issued, or likely to be. The Chartered Company is heavily in debt; does not know how or where to obtain funds; and its expenditure now exceeds its income and is likely to do so for some years. The Mozambique Company has no debts; possesses about £80,000 in cash, and, when its shares stand at about £10 each, or over (which they will very soon) could easily raise whatever funds it needs by a small issue of shares to its present members. But this is not likely to be done, for the company's revenue now exceeds expenditure, and is increasing so rapidly each month that it will be able to pay large dividends. When the shares stand at £10 the company, while giving its shareholders a handsome bonus, could easily raise half a million by issuing 100,000 shares at £5 each, and still leave the issued capital only £500,000. Even when Mozambiques are £14 each the company will be capitalised considerably below the present market value of the Chartered Company. I consider Chartered cheap at £5, but when they reach that figure Mozambiques ought to be selling at £30 each.

Pardy's Mozambique Syndicate, owning gold claims in the territory of the Mozambique Company, although founded only a few months ago, has successfully floated two subsidiary companies, and is now floating a third. It has already paid its shareholders dividends in cash of 30 per cent. and in shares of 100 per cent. (which shares can be sold on the market at a premium of 20 per cent.); has another 100 per cent. dividend in shares available; and will receive 80,000 fully-paid shares and £3000 in cash from its third subsidiary company now being floated. Its extensive property will permit of a very large number of subsidiary companies being floated, and, besides the purchase-money, the company will in each case derive a handsome income from management remuneration.

What mining syndicate, owning gold claims in the territory of the Chartered Company, can show such a record in so short a period? I advise your readers to buy Mozambiques without delay, if they wish to obtain shares for "a mere song," which within a few years, will be selling at fabulously high prices.—I am, &c., SOUTH AFRICA.

THE KLERKSDORP GOLD AND DIAMOND COMPANY, LIMITED.

TO THE EDITOR OF "THE MINING JOURNAL."

SIR,—I advise my fellow-shareholders not to pay the 1s. call just made unless, and until, the directors answer these questions:—

1. Why has no ordinary general meeting been held since February 28, 1893?
2. How many shareholders in the old company resided in South Africa, and how many shares did they hold? (a) How many of these have claimed new shares, and what number have they claimed?
3. Why were English shareholders only allowed from October 1 to October 10 for applying for new shares, and South African shareholders from October 1 to the present month?
4. Why has no statutory meeting been held?
5. Do the directors intend holding one? (a) If so, when? (b) If not, why not?
6. How many shareholders refused to apply for the shares they were entitled to, and what number did they hold in the old company?
7. How many shareholders applied for excess shares, and how many were applied for by them?
8. How many shares are available for allotment as excess shares?
9. Do the directors intend to allot them? (a) If so, when? (b) If not, why not?
10. Why has no report and balance-sheet been issued since November 30, 1892?
11. What did the liabilities of the old company consist of, and amount to, last October?
12. Why was this information withheld?
13. Why are the shareholders told nothing as to the results of the diamond drill and what has been done on the property during the last two years, and what has been done and will be done? Unless the directors call a meeting at once, and undertake to send us regular monthly reports, the sooner we appoint others in their place the better.—I am, &c., SHAREHOLDER.

WEARDALE LEAD COMPANY: A CORRECTION.

TO THE EDITOR OF "THE MINING JOURNAL."

DEAR SIR,—My attention has been called several times to a statement made by Mr. Maxfield at the Weardale Lead Company's yearly meeting, held December 6th, 1894, viz.:—"It was said by our late manager that Weardale could not pay with lead under £14 per ton." The above is incorrect. I have repeatedly said the mines would pay at present price of lead, and do not hesitate to say I could make them pay fair dividends with lead at £9 10s. per ton. I could have done so in years past had I been allowed to regulate incidental expenses. This would have been proved to the satisfaction of shareholders had the directors called a meeting on the mine when requested to do so last year. It is now nearly five years since operations were commenced at Sedling Mine. At the yearly meeting in 1893 "it was reported that drifts were being driven east and west in the 56 fathom level in ground worth from 1 to 2 tons per fathom, and that the bottom of the mine is by far the richest." If Sedling be the sheet-anchor of Weardale, why is it not developed, and some practical results shown? Greenlaw Mine appears not to have had the best of management. Mr. Maxfield says a level has been driven 150 or 200 fathoms in a barren part of vein or lode. The leading part having slipped away or lost over to one side, it seems unaccountable that crosscuts were not resorted to to prove this long ago. In fact, there appears to be a want of management. I repeat, as a practical miner, that Weardale is one of the best lead mining properties in the country, and with fair commercial, practical management would pay and make a profit at present price of lead. Trusting you will kindly find this a place in your Journal.—Yours faithfully, JAMES BLENKINSON.

3, Alber Terrace, Middlesbrough, January 14.

LATEST FROM THE MINES.

CABLEGRAMS AND TELEGRAMS.

ABBOTT'S.—The directors have received cabled advice that the transfer of the property has been completed. Lord Douglas of Hawick and Tibbers, and A. Marshall, Esq., have joined the board.

AFRIKANDER.—The return of gold won for the month of December was 365 ounces from 1150 tons milled, and 235 ounces from 930 tons of tailings treated by cyanide, the total being 600 ounces. The manager adds that preparations are complete for materially increasing the returns.

BAYLEY'S REWARD CLAIM.—Week's run, 453 ounces, 135 tons.

BONNIE DUNDEE.—Cablegram January 7:—Trial crushing from Victory reef 12 tons, has yielded 27 ounces of gold.

BRILLIANT CENTRAL.—Messrs. Burditt, Munro and Co., of 16, Cornhill, E.C., have received the following cablegram, dated Brisbane, January 14:—"Brilliant Central has declared a dividend of 3d. a share."

CASHMAN'S BRILLIANT REWARD CLAIM.—The secretary has received a cable from Australia intimating the transfer to the company of the Reward Claim. A cablegram has also been received from the manager, who is at present at Coolgardie on his way to the mine.

CASSEL COLLIERY.—Output for December, 14,158 tons; profit, £2700.

CROWN REEF.—Total profit for December, £10,004.

DAY DAWN BLOCK AND WYNDHAM.—The general manager at Charters Towers of the Day Dawn Block and Wyndham Gold Mining Company cables:—"Have crushed 350 tons of quartz, taken from all parts of the mine, for a yield of 265 ounces of gold. The approximate value of this return is £915."

DAY DAWN P.C.—The following cablegram has been received from the manager at Charters Towers, giving the result of the crushing for the fortnight ended January 12:—"No. 1 shaft, 32 tons, 47 ounces; No. 3 shaft, 121 tons, 252 ounces. Have shipped per s.s. *India*, 1391 ounces."

D'ARCY ESTATES.—Report dated December 8:—"Main shaft sunk 6 feet through very hard diorite; present depth 217 feet. Owing to the number of small veins showing good quartz another vertical shaft has been started on Portion 3."

EASTLEIGH MINE.—Returns for December. 40 stamp mill running 27 days produced 1936 ounces.

ELKHORN.—Bullion produced in the mill for the week ended January 12, 8700 ounces.

FRONTINO AND BOLIVIA (South American).—The directors have received advices from the mines dated 22nd November and 7th December, 1894, also a letter from Messrs. Restrepo, dated 12th November. The statement for the month of November is as follows:—3420 tons produced bar gold, 3898 ounces; tributaries' gold produced bar gold, 176 ounces. Total, 4074 ounces. Also 60,729 lbs. of sulphurets, valued at £1055 17s. 7d. Estimated value of the gold and sulphurets, £10,816 15s. 2d. Cost at the mines, Medellin, and in London, £6274 19s. 9d. Estimated excess of returns, £4541 15s. 5d.—The directors have also received a cablegram from their manager by which they learn that the estimated profit for the month of December was £4170.

GELDENHUIS ESTATE.—A cablegram has been received from the head office at Johannesburg, stating the following results for last month (December):—"Crushed, 9907 tons; obtained from mill, 3796 ounces of gold; obtained from tailings by cyanide, 2637 ounces of gold; total, 6433 ounces of gold."

GELDENHUIS ESTATE AND GOLD.—Copy of cablegram received from head office:—"Last month's profit was £9400."

GEORGE GOCH.—According to private cablegram received from Johannesburg, 30 samples of south reef ore from the western portion of the property have averaged 2 ounces 17 dwts. per ton. Stone from the South Reef is now being milled.

GLENROCK.—The following cablegram has been received from Arrowtown:—"Clean-up; crushed 157 tons, obtained 202 ounces."

GOLDEN GATE.—The manager cables:—"The present depth of diamond drill bore from surface is 1900 feet. The nature of the country rock is of a highly favourable character for reefs."

GUADALCAZAR QUICKSILVER.—The quantity of quicksilver drawn off during the five weeks ending December 27th, 1894, as cabled from the mines amounts to 9600 lbs.

HAURAKI.—The directors have received the following telegram from the manager, viz:—"The tributaries have crushed 6 cwt. of specimen stone, yielding 1900 ounces of gold. Shall commence crushing ore next week on behalf of the company. The reefs are looking well."

HERIOT.—From the report for November:—"During the month 4,900 tons of ore have been treated. Profit for month £6226 11s. 6d. Expenditure on capital account, £5511 13s. 3d. The manager reports that 335½ feet of driving, sinking, and crosscutting have been completed during the month."

HAURAKI GOLD.—The directors have received the following telegram from the manager, viz:—"The tributaries have crushed 6 cwt. of specimen stone, yielding 1900 ounces of gold. Shall commence crushing ore next week on behalf of the company. The reefs are looking well."

ISLAND BLOCK.—The secretary states that since the 10th ult., 190 ounces of gold have been obtained, the total expenses at the mine having been about 55 per cent. exclusive of royalty 8 per cent.

JOE'S REEF UNITED.—The secretary announces receipt of the following cablegram from the company's mine manager, dated January 11:—"Cyanide works are completed, and we have begun work."

KAPANGA.—The directors have received the following telegram from the manager, viz:—"During the week the crosscut at the 800 has been driven 25 feet. Have intersected a belt of veins."

LIONSDALE ESTATES.—The following cablegram has been received from the manager, dated January 11:—"7 feet same quality as last."—Note: this assayed 8 dwts.

MILL'S DAY DAWN UNITED.—The directors have received the following cablegram from Charters Towers:—"Have declared the usual monthly dividend of 6d. per share, payable on Friday, the 25th inst."

MOUNT LEYSHON.—Fortnightly crushing: 1400 tons; crushed, 232 ounces gold; 40 stamps mill ran 10 days. Profit, £32 10s.

NEW RIETFOONTEIN.—Crushed during December, 2600 tons; obtained 1711 ounces of gold; cyanide works treated 2622 tons, yielding 662 ounces; from concentrates, 88 ounces; total, 2461 ounces.

NEW ST. AUGUSTINE.—A cablegram from the manager of the mine, dated January 16, states:—"400 loads yielded 39 carats. I have shipped 69 carats; value £100."

NICOL GOLD MINES OF WESTERN AUSTRALIA.—Mr. Albert F. Calvert writes:—"Specimens of ore from the East Nicol Mine have been submitted to the Government Geologist of Western Australia for assay, with the following

ult:—"3 ounces 10 dwts. of gold per ton. A trial crushing of 2 tons of ore from the Nicol Mine has given a return of 2 ounces 5 dwts. per ton."

OTTO'S KOPJE.—The following has been officially communicated:—"From Mr. Lisle's cables of 10th and 11th inst. it appears that, upon starting work some slight alteration in the gear became necessary, which may delay production for a week or 10 days."

PIGG'S PEAK.—Cable, dated 17th January:—"Secured for Pigg's Peak Company property consisting of 200 claims, water-right of 200 horse-power, situated opposite to Sheba, Barberton. Reef from 2 to 12 feet broad."

PRINCESS ESTATE.—2950 tons were crushed during December, yielding 1400 ounces of gold from plates and 455 ounces of gold from tailings.

ROBINSON.—The following cable from the head office at Johannesburg is to hand:—"Profit for month of December, 1894, £36,500."

SAN SALVADOR SPANISH IRON ORE.—The s.s. *Hugh Sleigh* sailed from Santander, on Wednesday, with a cargo of this company's ore for Scotland.

SIERRA BUTTES.—Result of the working at the company's mines for December:—Sierra Buttes Mine: Total receipts, \$2474 equal £495; total working expenses, \$1693 equal £339. Plumas Eureka Mine: Total receipts, \$5454 equal £1091; total working expenses, \$3985 equal £797.—Uncle Sam Mine: Total receipts, \$12,674 equal £2535; total working expenses, \$8291 equal £1658.

STAR OF THE EAST.—Mr. Samuel James, of 3, Copthall Chambers, Angel Court, E.C., has received the following cablegram from Perth, dated 14th inst.:—"Star of the East (Murchison) has declared a dividend of 6d. per share."

SUTHERLAND REEF.—Copy of cablegram received:—"Shall commence crushing early in February. We are driving east and west on the 310 feet level; the appearance of the ore body is improving in this level."

TRANSVAAL GOLD.—Working costs for December, £3200. VAN RYN.—Net profit for December, £2550; cyanide works, £900; total, £3250. Total profit for November, £1950.

WENTWORTH GOLD FIELDS PROPRIETARY.—The following cablegram has been received from the mines:—"During the last five weeks we have crushed 980 tons of ore, yielding 4120 ounces of gold. The Phoenix underlay shaft 500 feet level is looking first-rate; and we will at once commence crosscutting from the bottom of the winze on the 600 feet level towards the contact."

WENTWORTH EXTENSION.—Report dated December 8: East crosscut 156 feet level, in 266 feet, progress during the week 12 feet, face still in coarse-grained diorite. Main north-west drive from the alluvial shaft extended 10 feet, total length 245 feet. Wash continues about 18 inches thick.

ROTHERY BLOCK GOLD MINE (LIMITED).

NOTICE IS HEREBY GIVEN, that the LIST OF SUBSCRIPTIONS will be CLOSED TO-MORROW (SATURDAY) MORNING at 12 o'clock for TOWN, and on MONDAY MORNING for COUNTRY APPLICATIONS.

By Order,
J. P. KNOTT, Secretary (pro tem).
31, Threadneedle Street, London, January 18th, 1895.

In order to save time, the following Form of Application can be used, and sent with a deposit of 1s. per Share either to the Secretary, at the Company's Offices, or the City Bank (Limited), 20, Threadneedle Street.

[FORM OF APPLICATION FOR SHARES]
TO THE DIRECTORS OF THE ROTHERY BLOCK GOLD MINE (LIMITED).

Gentlemen,—I enclose the sum of £ , being the deposit of 1s. per Share, payable on Application for Shares of £1 each. I request you to allot me that number of Shares, and I agree to accept the same, or any smaller number that may be allotted to me, upon the terms and conditions of the Prospectus, and I request you to place my name on the Register of Members in respect of the Shares so allotted to me, and I undertake to pay the further instalments upon such allotted Shares as the same shall become due, and I agree to waive any fuller compliance with Section 38 of the Companies Act, 1867, than is contained in the said Prospectus.

Name in full
Address
Description
Ordinary Signature
Date..... 1895.

THE ROTHERY BLOCK GOLD MINE, LIMITED
(WITWATERSRAND, SOUTH AFRICA).
Incorporated under the Companies Acts, 1862 to 1890.

Capital £120,000, in 120,000 Shares of £1 each, whereof 60,000 are now offered for Subscription at par, payable as follows:—1s. per Share on Application, 4s. per Share on Allotment, 2s. 6d. per Share one month after Allotment, 2s. 6d. per Share two months after Allotment, and the balance in calls not exceeding 5s. per Share at intervals of not less than one month.

DIRECTORS.
JAMES ADAMES, Esq., *Lowes, Sussex.*
EASTON J. COX, Esq., *The Lynch, Eastry, Dover.*
ALBERT HESS, Esq., C.E., 7, Lothbury, E.C., London Director of the New Rietfontein Estate Gold Mines (Limited).
HERBERT KNATCHBULL-HUGESSEN, Esq., M.P., Carlton Club, and Lynton, St. Ivinghouse.
ALBERT E. ROSS, Esq., Abingdon Mansions, Kensington, W.

LOCAL DIRECTORS.
F. VINCENT STOKES, Esq., } Johannesburg, S.A.B.
JULIUS FRIDLANDER, Esq., }
ALBERT HERZBURG, Esq., }

BANKERS.
The CITY BANK (Limited), 20, Threadneedle Street, London, E.C.

SOLICITOR.
WALTER F. STOKES, Esq., Bedford Row, London, W.C.

BROKERS.
Messrs. J. POLLAK and CO., 8, Drapers' Gardens, E.C., and Stock Exchange.

AUDITORS.
Messrs. W. H. PANNELL and CO., F.C.A., 13 and 14, Basinghall Street, E.C.

SECRETARY AND OFFICES (pro tem.).
Mr. JOHN P. KNOTT, 81, THREADNEEDLE STREET, LONDON, E.C.

This Company is formed to acquire and work a valuable gold mining property known as the Rothery Block in the Randfontein district, South Africa.

The property is situated on the farm "Middleveld," about twenty-four miles west of Johannesburg, and nine miles south-west of Krugersdorp station on the Rand Railway. It consists of a block of ninety-two claims, in immediate proximity to the Randfontein Estates Company, and is traversed by the same Main Reef series.

Full Prospectuses can be obtained from either the Bankers, Brokers, Solicitor, or Secretary.

The LISTS will OPEN on MONDAY, 21st January, and CLOSE at or before Ten A.M. on WEDNESDAY, 23rd January.

THE NEW ZEALAND JUBILEE GOLD MINE (LIMITED).

Incorporated under the Companies Acts of 1862 to 1890.

SHARE CAPITAL £100,000.

Divided into 100,000 Shares of £1 each.

ISSUE of 25,000 SHARES of £1 each, at par, payable 2s. 6d. on Application, 7s. 6d. on Allotment, and the balance as and when required; one month's notice to be given, and no call to exceed 5s. per Share, of which £10,000 will be available as working capital. The remaining 75,000 Shares will be allotted to the Vendor as fully paid-up in part payment of purchase-money.

Directors.

*WILBERFORCE BRYANT, Esq., Stoke Park, Bucks (Chairman). } Directors of the
*HUGH ASTLEY, Esq., 59, Cadogan Place, S.W. } New Zealand
Jubilee Syndicate
(Limited).
MATTHEW G. HALE, Esq., 25, Wynnstay Gardens, Kensington, S.W.
DUDLEY A. O. SCOTT, Esq., 45, Eaton Square, S.W. (Director Lippards Vlei Estate and Gold Mining Company, Limited).
*F. A. THOMPSON, Esq. (Managing Director), 93, Oxford Gardens, North Kensington, London, W. (late Chairman of the South Simmer and Jack Deep Level Gold Mining Company, Limited).
*Will join after allotment.

Bankers.

THE BANK OF NEW ZEALAND, 1, Queen Victoria Street, London, E.C.

Solicitors

MESSRS. SHEPPARDS, PELLYS, SCOTT, and CO., 57, Old Broad Street, E.C.

Auditor.

RICHARD RABBITGE, Esq., F.C.A., 32, Poultry, E.C.

Secretary and Offices.

B. O. O. ORLEBAR, Esq., Broad Street House, E.C.

PROSPECTUS.

This Company has been formed for the purpose of acquiring, and working on an extended scale, a large and rich mining Special Claim named "The Jubilee," having an area of 193 acres 15 perches, and situated in the Upper Thames District, North Island, New Zealand. The property entirely surrounds the Waitakari Company's Mine, which has produced gold to the extent of upwards of £30,000 (see "Handbook of New Zealand Mines," published by the Government), and the reefs which have produced this amount of gold are proved by their underlay and extensions to pass through the Jubilee property. It is also in the same district as the celebrated Waihi Gold Mine, and is stated to be in identically the same geological formation.

The tenure is leasehold direct from the Government, and was granted on the 10th day of November, 1887, to Mr. E. Kersey Cooper, under the provisions of the New Zealand Mining Act, 1885, for a period of 21 years, renewable indefinitely, the rent being fixed at 2s. 6d. per acre for the first year, 5s. per acre for the second and third years, 10s. per acre for the next four years, and 20s. per acre for the next fourteen years.

The property was acquired by the New Zealand Jubilee Syndicate (Limited) in the month of May, 1894, from Mr. Cooper, who has since been employed in its management and development on behalf of the Syndicate. At the time of the sale of the property to the Syndicate the present Vendor, Mr. F. A. Thompson, secured an option over it, which he has now exercised, such option having been obtained prior to the recent important developments in the neighbouring Waihi property.

The property is suitably equipped with Manager's House, Stable, three Blacksmiths' Shops, a House for the Battery Hods, four Miners' Dwellings, a new substantially built Battery, consisting of ten 9-cwt. stamps, two M. K. Pans, five Berdons, five Settling Pans, run by a good double cylinder 25-h.p. engine and large Cornish boiler, connected with the "Queen" Low Level by means of a tramway substantially constructed, and equipped with seven trucks and two timber trolleys, thus enabling the delivery of quartz and fuel to the Battery at the cheapest possible rate, as well as running timber to the mouth of the Level; a wire tramway is also erected, connecting the works at the gully with this Battery, and Mr. Cooper, in his Report, states that 30 tons of ore can be daily transported to the Battery from the Gully deposit alone.

Upwards of £11,000 has been expended upon the development and equipment of the mine, and Mr. Bohm states in his report (see copy enclosed with the Prospectus) that there are now in sight, ready for immediate extraction and treatment, 2,350 tons of ore, as follows:—

Ore in sight at Queen Low Level, 20,000 tons, value	£60,000
1 ounce per ton at £3	£300
Ore in sight at Alexandra, 500 tons	£1,500
(but probably much more) at £10 per ton	5,000
Total	£66,800

Estimated cost of production and treatment at £1 10s. per ton	37,500
Net value of ore in sight	£29,300

Mr. Cooper, in his report, states that about 9 tons of ore which he brought from the Alexandra Gully, and which he divided into three classes, were sold by Messrs. Johnson, Matthey, and Co. to the smelters at the rate of—

No. 1	£30 10s. per ton.
No. 2	£20 0s. "
No. 3	£7 12s. "

and that 9 tons of ore taken from Butler's Reef were sold to the smelters for £19 15s. per ton.

It is estimated by Mr. Cooper that, upon the completion of the Cyanide Plant (now in course of construction), the Company will be able to treat 30 tons of assayed ore per day of a class that should yield at least 2s. per ton, and after making a liberal allowance for mining and treatment expenses, he estimates a minimum profit of £5 per ton, which would be equal to £150 per day, and, allowing for working 300 days in the year, should pay a yearly profit of £45,000. There is an ample supply of water for boiler and battery purposes, and it is believed that the above production of gold can be largely increased by the addition of further crushing machinery, for which the working capital now provided will suffice.

The following tabulated statement, taken from the published reports of the Waihi Gold Mining Company (Limited), shows the crushing made by that Company and the value obtained in sterling, viz:—

From	To	Tons crushed	Value
Jan. 1st, 1892	Dec. 31st, 1892	18,397	£44,349
Jan. 1st, 1893	Aug. 26th, 1893	13,072	40,860
Aug. 26th, "	Sept. 23d, "	1,602	4,800
Sept. 23d, "	Oct. 22d, "	1,550	4,600
Oct. 22d, "	Nov. 20th, "	1,650	5,440
Nov. 20th, "	Dec. 2nd, "	1,850	5,700
Jan. 2d, 1894	Feb. 10th, 1894	2,779	6,588
Feb. 10th, "	Mar. 10th, "	1,718	4,755
Mar. 10th, "	April 7th, "	1,717	5,053
April 7th, "	May 5th, "	1,633	4,486
May 5th, "	June 2nd, "	2,039	6,263
June 2d, "	June 30th, "	2,110	6,397
June 30th, "	July 23rd, "	2,107	6,309
July 23rd, "	Aug. 25th, "	2,070	6,211
Aug. 25th, "	Sept. 24d, "	2,273	7,210
Sept. 24d, "	Oct. 20th, "	2,100	7,280
Oct. 20th, "	Nov. 17th, "	2,150	8,860
Nov. 17th, "	Dec. 17th, "	2,200	10,290

Total crushed during above period 62,413 Tons Value £186,452

Mr. Bohm states that the characteristics of the stone from parts of Butler's and the main reef on this property are identical with those of the Maribou, the chief gold producing reef of the Waihi.

The statements made in this Prospectus are based on the reports of Messrs. D. H. Balydon, M.E., E. K. Cooper, and W. D. Bohm, M.R.L., F.C.S., copies of which accompany the Prospectus, and the published reports of the Waihi Gold Mining Company (Limited), the £1 Shares of which Company are now quoted at about £7 per Share.

The Vendor, Mr. F. A. Thompson, who is reselling the property to the Company at a profit, has fixed the purchase price at £90,000 (including all charges connected with the formation of the Company up to allotment, except registration fees and legal expenses), payable as to £15,000 in cash or Shares, and the balance of £75,000, in fully-paid Shares of the Company.

The following contracts have been entered into:—
1. Between Edward Kersey Cooper of the one part, and Sidney Herbert Waller, as trustee of the New Zealand Jubilee Syndicate (Limited), of the other part, dated 22nd December, 1893.

2. Between the New Zealand Jubilee Syndicate (Limited), of the one part, and Frederick Augustus Thompson of the other part, dated 2nd May, 1894.

3. Between the New Zealand Jubilee Syndicate (Limited), of the one part, and Frederick Augustus Thompson of the other part, dated 9th January, 1895.

4. Between Frederick Augustus Thompson of the one part, and B. O. O. Orlebar, as Trustee for the Company, of the other part, dated 11th January, 1895.

There are also various contracts or arrangements relating to the carrying on of the mine, and to the formation of the Company, and the guarantee of a portion of the capital, which may come within the provisions of Section 38 of the Companies Act, 1867; Messrs. Astley and Bryant, two of the Directors of the New Zealand Jubilee Syndicate (Limited), who will join the Board of the Company after the allotment of Shares, have joined in this guarantee, for which they will receive certain payments from the Vendor out of the purchase consideration. Subscribers for Shares will be deemed to subscribe with notice of such contracts or arrangements, and to waive any further compliance with the said section than is herein contained.

Copies of the Prospectus and Forms of Application can be had of the Bankers, Brokers, and Solicitors, or at the Offices of the Company, where also can be seen copies of the Articles of Association, contracts, original reports, maps, photographs, specimens of the ore, &c.

The total quantity and value of gold exported from New Zealand to 31st March, 1894, according to the last Government Blue-book, is 12,603,944 ounces, of the value of Forty-nine Millions Five Hundred and Sixty-six Thousand Eight Hundred and Seventy-eight Pounds (£49,566,878).

C. PASS & SON (Limited), BRISTOL,
 ARE BUYERS OF
 LEAD ASHES, SULPHATE OF LEAD, LEAD SLAGS,
 ANTIMONIAL LEAD, COPPER MATTE, TIN ASHES, &c.
 and DROSS or ORES containing
 TIN, COPPER, LEAD, AND ANTIMONY.

LAMBERT'S WHARFAGE CO.,
PRINCE OF WALES DOCK, SWANSEA.
 Ores, Mattes, Regulus, and Bars received and prepared for market.
 Copper, Lead, Tin, Spelter, and Pig Iron Received, Weighed, and
 Sampled, and Warrants issued against same.
 N.B.—Warrants are on accepted list of London Metal Exchange.
 Regular lines of steamers from America, Europe, &c.
 Consign goods to Lambert's Cranes, Prince of Wales Dock, Swansea.

PACIFIC MINING AGENCY AND TRUST COMPANY.

A Corporation organised under the Laws of the State of California
 CAPITAL STOCK, £50,000.
 BOARD.
 IRWIN C. STUMP (Chairman) Manager of the Estate of the late
 U.S. Senator Hearst.
 IRVING M. SCOTT, Manager Union Iron Works.
 JACOB H. NEFF, President California Miners' Association.
 P. N. LILIENTHAL, Manager Anglo-California Bank (Limited).
 W. F. GOAD, Vice-President, Wells, Fargo, and Co.
 D. M. BURNS, Capitalist.
 R. C. CHAMBERS, Manager Ontario Mine, Utah.
 WILLIAM C. RALSTON, Secretary (Secretary California Miners
 Association).
 BANKERS—The ANGLO-CALIFORNIAN BANK (Limited).
 HEAD OFFICE—MILLS BUILDING, SAN FRANCISCO, CAL.

THIS COMPANY sells Mines, Mining Claims, Ditch Properties,
 and Water Rights ON COMMISSION, and will act as Agent and
 Broker for the Sale and Purchase of such Properties.
 It is intended to conduct the Purchase and Sale of Mining Claims,
 Ditch Properties, and Water Rights on the same basis as a real estate
 transaction.

The Company is prohibited by its Articles of Incorporation from
 buying or selling on its own behalf, or except upon commission, or
 as agent or factor for others.

The buyer pays no fees whatever, and there is no incentive to
 advance the price beyond the original figures at which the price and
 commission have been agreed upon with the seller.

It is not intended only to negotiate the sale of an entire property but
 interests in such may be sold or money obtained for development work.

This Company especially solicits the business of making reports
 or examinations for non-resident mine owners on any of their mines
 in the United States, and obtaining special information as to their
 condition and so forth (said reports being confidential).

Those who conduct the business of the Company have had long
 experience in mining operations, and it is their intention to place
 the Company in a position to inspire the confidence of all who seek
 its assistance in its integrity and fair dealing.

We respectfully refer to any Bank in the City of San Francisco
 and to the Anglo-Californian Bank (Limited), London, as to the
 standing of the Board of Directors of this Company.

Descriptions of properties for sale with maps, reports and all
 necessary information, are left on file in the office of the Company.
 Abstracts of such reports with prices of mines will be furnished
 upon application.

California has produced £267,000,000 in gold, and is still producing
 £2,680,000 a year. There are thousands of claims requiring capital
 for development. In other Pacific Coast States and Territories there
 are abundant opportunities for investment in mines of gold, silver,
 copper, lead, coal, and so forth. Information concerning these will
 be furnished by this Company on application.

This Company will also furnish competent engineers, superintendents,
 foremen, miners, millmen, assayers and others connected
 with the mining industry on application, furnishing their references
 and so forth.—Cable Address, "CHAPIN," San Francisco.

THE BUTE WORKS SUPPLY COMPANY, CARDIFF.

Telephone: No. 45 (Post Office and National).
 Telegrams: Gething, Cardiff.

WAGONS.—New to Latest Regulations, 50 with one end
 two side and two bottom doors, wheels with WROUGHT Bosses,
 large capacity (12 inches longer and 4 inches deeper than usual),
 ready for lettering. New to Latest Regulations, one end and
 two side doors, sides and ends 3 inch red deals, all inside under-
 frame timbers of English oak; delivery, about 15 per week, com-
 mencing forthwith. 50 End Tip 10-ton Coal Wagons to New Regu-
 lations, equal to new, prompt delivery.

LOCOMOTIVES.—One good second-hand Saddle Tank Loco.
 six wheels coupled, ready for instant work, and cheap for cash or
 three years' purchase—lease. 14 inch cylinders, by Avonside Engine
 Company, now near Cardiff.

RAILS.—Bridge, 14 to 120 lbs. per yard; Flange, 10 to 100 lbs.
 per yard; Double Head, 30 to 82 lbs. per yard; and Bull Head, 50 to
 96 lbs. per yard.

SLEEPERS.—Wood, Iron, and Steel. A quantity of Metre
 Gauge Steel Sleepers for Sale, Cheap. 1400 new Baltic redwood
 sawn rectangular, 8 feet by 8 inches by 4 inches at 1s. 3d. each net
 f.o.t. Cardiff.

PORTABLE RAILWAY.—£9 18s. 9d. per 100 Yards of Rail-
 way (Steel Rails, 14 lbs. per yard, and Iron Sleepers), complete.

EARTH WAGONS.—75 side tipping 30-inch gauge, STEEL
 wheels and STEEL axles, £5 each, f.o.t. Cardiff.

BRICKS.—Fire and building bricks, also clay.

WE are instructed by the MOUNT LYELL MINING
 and RAILWAY COMPANY (LIMITED), of
 Tasmania, to INVITE TENDERS from

SMELTERS or their AGENTS

for the undermentioned parcels of RICH ARGENTIFEROUS
 COPPER ORE lying at Messrs. Richardson and Co.'s Ore Wharves,
 Swansea, and we shall be glad to forward sealed samples of the
 various lots on application.

Tenders must be lodged at this Office not later than 2 p.m. on
 Friday, the 25th of January, 1895, stating the price per ton of
 20 cwt. (dry weight) for each lot of the Ore, including Copper,
 Silver, and Gold contents, without any draft or deductions whatever.
 Moisture, if any, to be taken at the time of delivery.

The Ore to be packed and taken from the Wharf on Warehouse
 Weights by the Buyers, at their risk and expense, within seven days
 after the Sale.

Payment to be made by good and approved Bills at two months
 date, or in Cash, less Discount, at Sellers' option.

Should two or more Buyers offer the same price, such being the
 highest price, the ore to be equally divided between them.

It is intended to accept the highest Tender, but we reserve to our-
 selves the right of declining to sell.

VIVIAN, YOUNGER, and BOND.

117, LEADENHALL STREET, LONDON, E.C.

The particulars are as follows:—

		Tons.	cwt.	qrs.
ex "Parramatta" (s)	Lot 1 weighing about	4	6	0
	" 2 "	4	5	3
	" 3 "	4	5	3
	" 4 "	4	13	2
	" 5 "	4	13	0

HENRY WIGGIN & CO. (Limited),
NICKEL AND COBALT REFINERS,
MAKERS OF BEST RED LEAD FOR FLINT GLASS
MANUFACTURERS,
BIRMINGHAM.

The Mining Journal,

RAILWAY AND COMMERCIAL GAZETTE:

An Illustrated Record of Mining, Metallurgical, Railway,
 Financial, Industrial, and Engineering Progress.

ESTABLISHED IN 1835.

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 GAZETTE, published every SATURDAY MORNING, price
 SIXPENCE, is recognised throughout the World as being the oldest,
 most influential, and most widely circulated Journal devoted to the
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 Mining and Metallurgy, London, were initiated and established by
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 literary contributions should be addressed to "THE EDITOR." All matter
 intended for insertion must be written on one side of the paper only.
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 correspondence and items of news or information from readers in all parts
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 tion for each inch in depth. Terms for special positions and contracts may be
 had on application.

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LONDON: JANUARY 19, 1895.

MINING PROSPECTS IN RHODESIA.

THE long-talked-of report of Mr. JOHN HAYS HAMMOND on
 the mineral resources of Mashonaland and Matabeleland
 has at length appeared, as an appendix to the voluminous
 report of the directors of the British South Africa Company,
 and it is of sufficient importance and significance to be treated
 by itself. We have constantly heard so much, and that infor-
 mation has been published with such forcible emphasis, respect-
 ing the vast mineral wealth of the newly-conquered country of
 Matabeleland, that we all the more eagerly welcome Mr.
 HAMMOND's report, to confirm or otherwise the opinions we
 have been led to form. Taking a general survey of it, we must
 admit it is not anything like so encouraging as enthusiasts led
 us to anticipate. The report has been accurately described as a
 marvel of condensation. Dealing with the geology of the region,
 he says:—"The great bulk of the country is granite, the re-
 mainder being mainly metamorphic schists. It is possible that
 this vast area of granite rock was at one time wholly or partially
 covered by sedimentary deposits, but, if so, these, with few ex-

ceptions, have been subsequently removed by erosion. Sand-
 stone deposits, with workable beds of coal, are said to occur near
 the Zambezi river. The metamorphic schists constitute the gold
 belt of the country. They occur as broad bands and patches in the
 granite. There is little doubt that these schists have been derived
 from igneous rocks, by mechanical metamorphism produced by earth
 movements. It is chiefly in this region of intense metamorphism
 that the quartz veins occur, the country rock of the veins being,
 in the majority of cases, a highly foliated chloritic schist. The
 fact that the schists are derived from igneous rocks intrusive
 in the granite, and are not sedimentary deposits overlying the
 granite, is of great importance for the future of the mining in-
 dustry, inasmuch as there is, from a mining point of view, no
 limitation in the depth of the rocks comprising the auriferous
 belt." At the present moment attention is being directed ex-
 clusively to the mining of gold ores, which occur chiefly in
 auriferous quartz veins, the quartz veins and the auriferous ores
 being, in general, similar to those of California and other mining
 countries. He then informs us that there are numerous auri-
 ferous belts stretching through the country, and that until more
 detailed investigations have been carried out, it is impossible to
 define the boundaries of those belts.

Mr. HAMMOND then deals in an interesting manner with the
 ancient workings, which are numerous. At the date of his exa-
 mination, which was in August and September of last year, about
 1890 miles of quartz reefs had been pegged out, of which, it is
 estimated, 380 miles actually cover ancient workings. The depth
 attained rarely exceeds 100 feet. Mr. HAMMOND is unable to en-
 lighten us as to when and where these ancient workings were made
 but as to the more important matter, whether much gold was
 taken out of them or no, he assures us that an enormous
 amount was obtained—in fact, millions of pounds' worth. This
 is one of the most encouraging statements in his report, and
 will, no doubt, make us all rest assured that many more millions
 will be taken out when depth is attained, and when modern
 methods of mining and reduction of ores are adopted. This
 assurance will not be in the least shaken by the following addi-
 tion Mr. HAMMOND thinks it proper to make:—"Various
 theories have been advanced as to the causes of the discontinu-
 ance of mining upon the ancient workings. It has been asserted
 that the veins pinched out in depth, and were in consequence
 abandoned by the ancients. It is undoubtedly true that in
 some instances the veins did pinch, and that the ancients,
 ignorant of the fact that such pinching was but temporary in
 occurrence, abandoned the workings. The tendency to pinch
 and to open out is a characteristic feature of fissure veins. The
 fact that levels have recently been driven upon many of the
 veins below the ancient workings, exposing well-defined and con-
 tinuous veins, is a complete refutation of the theory that the
 abandonment of the ancient workings was due to the fact that
 the veins pinched out in depth. Irrespective of the geological
 evidence upon this point, controverting the theory of the pinch-
 ing out of the veins in depth, we have then the actual demon-
 stration of the continuance of the veins below the ancient
 workings."

Further on he says:—"I am convinced that some of the un-
 worked portions of the veins will be proved to be as good as
 those portions exploited by the ancients; and, furthermore, that
 future explorations will establish the fact that other veins fully
 as valuable as those worked by the ancients have been left in-
 tact." After dealing fully with the probable causes of abandon-
 ment, he comes to the very wise conclusion—and one with which
 few will be inclined to disagree—that "the cessation of mining
 operations is chiefly ascribable to the incapacity of the miners to
 cope with the difficulties attending deep mining." He then dis-
 cusses briefly the character of the reefs, and sums up that "the
 evidence is most conclusive that the auriferous veins of Masho-
 naland, Matabeleland, and Manicaland belong, generally, to
 the class of ore deposits known as true fissure veins. Veins
 of this class are universally noted for their permanency
 which attribute, however, does not imply the occur-
 rence of pay-shoots of commercial value." The latter,
 of course, is a very important point, and he deals with it in his
 characteristically clear and concise style. He observes that
 sufficient attention has not been paid to proving the shoots, but
 points out that the indications strongly favour the view that
 future systematic developments will demonstrate the occurrence
 of pay-shoots of ore upon many of the properties. The con-
 ditions for economic mining, which he deals with lastly, he
 asserts to be favourable, the abundance of labour, wood, and
 water contributing to this end. The great economic disadvan-
 tage attending mining operations at present is the excessive cost
 of transportation, but this, he relieves us by saying, will be
 greatly improved by the completion of the railway from Fonta-
 villa to Chimoi, whereby the Fly country, a hitherto insuperable
 obstacle to cheap transportation, is bridged over, and also by the
 extension of the Capetown-Mafeking Railway towards Bulu-
 wayo.

Summarising, he considers the prospects of the country encour-
 aging. "The veins being undoubtedly true fissure veins, and
 the mineralisation being, as attested by the ancient workings,
 very extensive, there are, I think, substantial grounds to predict
 the opening up of shoots of ore from which an important mining
 industry will ultimately be developed." Finally, he conceives it
 to be his professional duty to utter a word of caution and
 warning to the investing public—for which they ought to feel
 thankful—to exercise due discrimination in the selection of the
 properties on which money is to be expended in development;
 and he impresses upon mining companies the necessity of estab-
 lishing the commercial value of the properties before under-
 taking the erection of plants for the reduction of the ores.
 "With these admonitions, I confidently commend the country
 to the attention of mining capitalists." And so we have now
 the expert opinion for which we have been waiting so patiently
 and so longingly. We were led to believe from enthusiastic and
 excitable persons that the country was simply glittering with
 gold; that it could be picked up on the surface; and that by

the side of it Western Australia was insignificant. The truth has been told us at last, and by an expert whose opinions will command universal respect. We may rest contented then that Matabeleland and Mashonaland contain within themselves vast resources of mineral wealth; that Nature has provided economic conditions in abundance for successful working; and that all that is needed for the prosperous prosecution of the industry are prudence, energy, and scientific skill.

THE CHARTERED COMPANY MEETING.

THE meeting of the British South Africa Company, which has been so eagerly awaited, is over, and the great Mr. CECIL RHODES has spoken. The sight at the Cannon-street Hotel, yesterday, was one that will not readily be forgotten by those who witnessed it. The largest room in that vast building was crowded to excess, and the burst of enthusiasm which greeted Mr. RHODES, as he rose to speak, must have thrilled the most unemotional. Mr. RHODES has passed through many proud moments in his distinguished career, but we cannot conceive of a more hearty and spontaneous welcome from an influential body of English gentlemen than that which greeted him yesterday; and, accustomed as he now is, to these outbursts, he must have been deeply impressed. The tenor of his speech came up to general expectations. It was little more than an amplification of the information which the shareholders had already gathered from the voluminous report of the directors. On the whole, the shareholders, who applauded the various sections of the address with enthusiastic vigour, should rest satisfied that the prospects of the company are not only immense, but that they are assured. It was forcibly pointed out that the dividends were dependable chiefly upon the vast mineral wealth which it has been proved the country contains. But Mr. CECIL RHODES, in his usual cautious manner, would not give a promise he did not limit himself to any particular period—as to when the shareholders might reasonably expect these dividends. On the other hand, Dr. JAMESON—who also was received with tumultuous enthusiasm—emphasised the fact that they would come in the “immediate future.” The outburst of cheering that greeted this statement is easily understood. As it is the development of the mineral wealth of the country which will more particularly interest the shareholders in this gigantic concern, so it will the readers of *The Mining Journal*. Therefore, we have, in the preceding leading article, dealt exclusively with the report of Mr. JOHN HAYS HAMMOND, the information upon which the hopes of Mr. CECIL RHODES and his colleagues are directly based.

The distinguished managing director of the Chartered Company laid particular stress upon two prominent characteristics of Mr. HAMMOND—his technical skill and his cautiousness. These combined made him especially fitted to carry out the delicate duties entrusted to him, and should induce everyone to reposefully place faith in the well-weighed statements in his report. Should Mashonaland and Matabeleland be the great gold-producing countries we are now confident they will be, the influences they will exert will have far more reaching consequences than bringing dividends into the pockets of the shareholders of the British South Africa Company. The whole civilised world generally—and England particularly—will benefit materially and prosperously. The mining industry itself—and in that we include everything that is necessary to aid towards its success—will gather fresh impetus, and there will be a grand time for those who are directly concerned in it. The Chartered Company has as many as 40,000 claims registered or as much as 2000 miles of mineralised quartz. What this imports is merely an arithmetical problem, and furnishes ample matter for the imaginative temperament to dwell upon. The vital question is as to how much of this can be depended upon as payable. That question Mr. HAMMOND deals with in his naturally lucid style, and argues that a large proportion of it, at the least, must contain payable shoots. A great number of experts, as well as amateurs, have expressed their doubts upon this head, but Mr. RHODES answers them with the following utterance: “It would be contrary to Nature to suppose that a country which is mineralised from end to end should not contain payable shoots.” We cannot dogmatise, of course, that it would be contrary to Nature, for a great many things must be taken into consideration, but it must be admitted that the probabilities are on the affirmative side.

Touching very lightly and briefly upon the other vital questions affecting the interests and the future prosperity of the Chartered Company, Mr. RHODES' speech should assure any individual shareholder who may have been pessimistically inclined. At the present moment, it is true, the revenue does not balance the expenditure, but it was emphatically urged that this is due, or, rather, was due, to exceptional circumstances, which are not likely to recur. Peace reigns supreme throughout the enormous extent of territory administered by the company; there is no fear of any further rising of the natives; and, above all, there are no wars to look forward to, because, in the words of Mr. RHODES, “there are no more people to make them.” In peering into the future of the company our vision is not impeded by mists of maladministration, confusion, or quarrelsome interference, but all is as clear as the noon-day. The opening-up of railways, which is one of the vital necessities, is proceeding apace, whilst all the principal towns and districts are being rapidly connected by the telegraph. As there are no impediments of these troublesome kinds existing, Mr. RHODES does not intend to ask for any further capital, which is a very welcome admission to the long-suffering shareholders. The capital will, therefore, remain at £2,000,000, which, after all, is very enormous. The meeting held yesterday was, in every particular, the most successful and the most enthusiastic ever held, and that is saying a great deal, and we feel convinced in our own minds that the shareholders, one and all, regard the ultimate brilliant prosperity of the undertaking assured.

NOTES AND COMMENTS.

THE New Year brings with it pretty conclusive evidence of the revival of mining in all parts of the world. Indeed, many who fancy they can see clearly into the future, prognosticate a year of unusual prosperity throughout 1895. Of course, we sincerely hope, for our part, that such a prophecy will be realised, and we are not without hopes that it will. At any rate, it must be admitted that the signs of the times point in that direction. Amongst other “lands of promise” is that of New Zealand, in which country there seems every prospect of a revival in the mining industry. It sadly needs it, many will be inclined to answer, and we are not disposed to deny it. For a long time now, New Zealand has been in a very bad way; she has had many ups and downs in regard to her gold wealth. Nevertheless, there are very few who know the country intimately who doubt that it is very rich in the precious mineral. We, ourselves, in not a few articles have furnished proof of this, but there are many grave obstacles to its successful exploitation. On the other hand, the country has advantages which Western Australia, and many other gold fields, would be only too glad to possess. Water is abundant, the climate is healthy, and there is an excellent supply of timber. What is needed most is, perhaps, a successful process for the treatment of ores. Already, the introduction of the cyanide process is having a marked effect upon the out-turns of bullion from those mines using it, and it is to this we must look to bring prosperity to the industry which has been in such low water of late.

THE report of the directors of the Victory (Charters Towers) Gold Mining Company for the half year ended October 31st last is not so pleasant reading as the preceding ones were. Shareholders, however, will not be inclined to take this much to heart, for, from all accounts, it is but a temporary decline. The directors word it thus:—“During the period under review the result of operations was disappointing, owing to the diminished size and quality of the mine, more especially in the workings in the eastern ground, adjoining the Brilliant boundary, where, from the show of stone, it was thought that a large shoot of good ore existed. Progressive works are, however, being carried on in anticipation of fresh discoveries, and there is, the directors consider, reasonable probability of explorations in the large area of untested ground being attended with good results.” During the six months 4683 tons of quartz were crushed for a yield of 44 ounces 11 dwts. 22 grains of gold, which realised £15,491. In addition to this amount, the sum of £349 was obtained for sludges sold to the Australian Gold Recovery Company. Receipts for the half-year from all sources, inclusive of credit balance brought forward (£2546), amount to £19,110, and the expenditure to £14,615, leaving available to be carried forward £4494. The shareholders will rejoice to hear that, owing to the purchase of the Victory mill and crushing plant, the cost to the company of crushing and treatment of tailings has now been reduced to about 10s. a ton, and that in other directions the directors are cutting down expenses, consistent with the efficient development and working of the property.

IN contrast with this, we are pleased to see an encouraging report from the directors of the Gold Fields of Mysore (Limited). A profit of £3454 4s. 9d. is certainly not a very large one, especially when compared with the profits of late years, but the circumstances which brought about the latter were exceptional. Taking the report as a whole, shareholders have no reason to feel discouraged as to the future, and when they take into account the growing prosperity of Indian mining, they have every cause to be encouraged. As is generally known, the company have sold during the year 296 acres of land to the South-East Mysore Company, now known as the Yerrakonda Gold Mining Company. The consideration for this was 50,000 fully-paid shares of 4s. each, equal to £10,000. As the prospects of the Yerrakonda are fairly good, this holding may be considered a pretty sound investment. The shareholders were some time ago informed that the board have resolved, in consequence of satisfactory results, to increase the scale of mining operations. The prospecting reports, we are told, have also been of a “most encouraging character, and the directors are confirmed in their opinion that active mining work should no longer be delayed on some of the most important of the discoveries made.” The most encouraging announcement is, probably, that made by Captain Rowe, that: “The developments on the lode at West Balaghat and Road Blocks have proved conclusively that it is a gold-bearing fissure-vein of a highly promising character, and one that should be prosecuted in depth.”

THE report of the directors of the Metropolitan Gold Mining Company presents information of an antithetical character. This company, which was formed so recently as 1887, has not had a very successful career. Indeed, it seems to retrograde rather than to progress. The directors “regret to have to record a considerable loss on the year's work amounting to £14,544. The charges include interest on loans, £2659, and the expenses in connection with an action at law, £1324. By deducting these two items, the loss for the year would be reduced to £10,563.” Such is the statement worded in the report, but we feel that by this manner of reducing it to £10,000, it will not lighten the burden they have to bear. We are afraid the position of the company is very discouraging; nor can we seek consolation in the explanation of the board: “The directors had to deal with great difficulties. Owing to the scarcity of native labour the mill could not be started until December last, and up to the end of February only 20 stamps were at work.” The words of encouragement they offer are necessarily very feeble:—“At the end of September last the ore in sight amounted to 55,800 tons, against 26,700 tons at the end of the previous financial year. The tonnage

crushed during the eleven months' operations in the year was 24,219 tons, yielding 8315 ounces 10 dwts. of retorted gold, which must be considered satisfactory, taking into account the lightness of the stamps. The board has decided to increase the stamping power by adding 10 new stamps of heavy type, and has under consideration the advisability of replacing the old light stamps by new ones of a similar heavy pattern. Owing to the financial position, the directors were not able to erect cyanide works at the company's expense; and as the erection of these works was imperative to ensure the success of the company, an arrangement was entered into on August 24 with the Rand Central Ore Reduction Company (Limited), under which that company agreed to build at its expense a suitable plant (Siemens' process), and to work the same on joint account, taking as its share of the venture one-third of the net profits. The agreement is for a period of two years, the company having, however, the right and option to take over the plant for its sole use and benefit at any time after the expiry of the first year at cost price plus 12½ per cent. thereon.”

THE prospectus which has recently been issued of a new West-Australian company, entitled “The New Australian Gold Fields (Limited),” and which has been exposed so easily and so forcibly in the Press, should come as a warning to prospective investors in West Australian concerns. It appears that the objects of this company are of the vaguest, except the principal one of getting the public to subscribe £20,000 in £1 shares at par, as an instalment of £100,000 authorised capital. “The company,” says the prospectus, “has been formed with the powers contained in the Memorandum of Association,” and these powers are of the most extensive kind, including authority “to undertake and transact the business of a stockbroker, stockjobber, banker, merchant, capitalist, and financier, or any of them.” But “it is proposed” to take immediate steps to obtain the control of “desirable Western Australian gold-bearing properties, with a view to their development or the sale of them to companies formed to work them, and to act as agents for these purposes.” In addition, it is seriously and gravely stated that properties of apparent merit have already been brought to the notice of the company, “but no contract for the purchase of any of them has been entered into, and the company is, therefore, free to apply its resources to the best advantage.” It is a long while since we have perused anything “so rich in cheek” as this, although prospectuses have lately overwhelmed the public which have been a disgrace even to company-promoters.

THE annual dinner of the old students of the Royal School of Mines is announced to take place on Friday next, the 25th inst., at the Criterion Restaurant. The chair will be occupied by Mr. W. H. Greenwood, who became an Associate of the School in 1871. He has devoted himself to the metallurgy of iron and steel, and has been connected with several large undertakings both in this country and on the Continent. Of these, one of the most important necessitated his residence in Russia for some years. At the present time he controls the rolling mills and the small arms factory of the Birmingham and Small Arms and Metal Company (Limited). Not only is he known for his practical work, but he is, in addition, an author of some standing, for his treatises on metallurgy are in high repute. The old students of the Royal School of Mines are scattered so widely throughout the world that it is difficult to secure the attendance of the same men year after year. The difficulty of getting together a large number is somewhat accentuated this year on account of the great development of mining in South Africa, and in Western Australia, in which the old students have played so large a part. A large number, however, have promised to attend, and the professors have signified their intention of being present in force. Several visitors of note are also expected, and all branches of mining and metallurgy, whether in base or precious metals, will be represented. It may be remembered that the last dinner was the 21st of the series, and was exceedingly successful.

TO say that heavy settlements are the rule now upon the Mining Market hardly conveys an adequate notion of the stress of affairs prevailing in stock-broking circles at the successive periods of the carry-over. Imagination of wide compass and high capacity has been brought to bear upon the department and appearance of the crowd of clerks assisting at the settlement; and the point of contact sought to be established between their excitement and generally dishevelled apparel, and that of the survivors of a railway collision, is, at least, useful in revealing the magnitude of the burden of work which has fallen upon the shoulders of the accountants. It is but comparatively recently since the West Australian market was the centre of a buzzing, seething activity, while South Africans were suffering from an attack of lotus-like torpor. A change of this was confidently predicted, and it came in the form of a complete inversion, such as now rules. Judging by the past, a shifting of the balance over again cannot long be delayed, and West Australians will accordingly soon come out of their languor.

THE report of Mr. A. T. Champneys, M.E., the late manager of the New Primrose Gold Mining Company, upon the Southern Goldenhuis Mine, will be considered encouraging by the shareholders in this concern. He says there are series of three distinct strata of banket formation, enclosed within sandstone walls running throughout the entire length of the property. The north reef is 8 feet thick; the middle reef 2 feet 6 inches, with sandstone horse of 18 inches, separating from lode 2 feet; whilst the southern reef is 4 feet thick. These dips, he says, all dip to the south at an angle varying from 55 to 60°. “The whole formation, which is distinctly traceable throughout the property, is intersected by numerous workings, and discloses a milling matter throughout, varying in richness from 5 to 12 dwts. per ton milling value.” Mr. Champneys then deals with the water question, and points out to the directors that it is of inestimable value to the property, and is sufficient to run 800 stamps. From

every point of view, therefore, the report will be considered eminently satisfactory to those directly concerned.

THE Welsh tin-plate makers are turning all ways in their endeavours to extricate the tin-plate business from the existing slough. Shareholders in tin mining ventures, to whom the present situation is one of so important moment, should be acquainted with a project which has been suggested by Mr. E. Rice Daniel, of the Cwmfelin Works, for the purpose of raising the price of tin-plates by a combination of the unassociated tin-plate makers. Mr. Daniel is one of the foremost among the Welsh manufacturers, alike as regards experience and position, and he has recently had the advantage of personal acquaintance in America with the position of native American tin-plate manufacture, and with the prospects of Welsh makers establishing themselves on the other side of the ocean. Impressed with the undesirability, if it could be avoided, of bringing down wages in Wales, Mr. Daniel proposes as an alternative the enforced raising of prices by resolution among the leading makers. In Mr. Daniel's opinion, were the Welsh mills united, an advance of 2s. or even more per box in tin-plate prices might be commanded, and he is agitating among his fellow-manufacturers for the taking of such a step. The answer which buyers on this side in the person of Liverpool, Swansea, and other merchants operating for America, make, is interesting. These important personages whose will in such cases goes a long way in deciding the law, declare that Mr. Daniel's scheme is impracticable. He forgets, they urge, that America is the greatest of the Welsh markets, and that nothing will induce American buyers to consent to concede artificial values.

THE MINING MARKET.

FRIDAY EVENING.

A heavy settlement.—Business restricted.—A steady and firm tone for Kaffirs.—Chartered dull.—West Australians stronger.

TO an extent, the business of this week has been disjoined by the heavy character of the settlement. In magnitude the carry-over commencing with this week will compare with any concluded in the market during the past twelve months. Rates ruled at about the medium, and no difficulty was experienced in this regard. Among the most conspicuous rises shown by a comparison of the making-up prices with those of the preceding carry-over were those in City and Suburban, Consolidated Gold Fields, Crown Reef, Ferreira, and Modderfontein. Conspicuous rises also occurred in Buffelsdoorn, Champ d'Or, Goldenhuis Estate, Jumpers, Primrose, Wemmer, Wolhuter, Oceana, De Beers, Jagers, Klerksdorp, and Virginia (Transvaal). Early in the day business for the new account was out of the question, but during the later hours a strong demand arose, and many of the dealers prophetically foreshadowed another busy period. A partial verification of this was to be found in the rush of business that came on Tuesday. From opening to finish a large volume of transactions was conducted, to the accompaniment of much din and excitement. Movements, however, were not uniformly upward, but the crowd of buyers that entered steadily upon the work increased, as was inevitable, the strength of the market. A sudden arrestment of the lively tone of affairs was occasioned on Wednesday by the political crisis in France. The retardation continued throughout the earlier hours, but towards the close of the day, the lower prices brought a crowd of buyers into the market, to the general advantage of buyers. There were naturally several exceptions to the prevailing flatness, but the rule applied generally. By Thursday the rush of business had subsided into a steady, persistent course of operations which tended, more than the feverish rush of the last few days, to evidence the inherent strength of the market. Declines were fairly large in number, but not at all considerable in extent, and there were, on the contrary, several substantial gains. Other departments of the market were firm and strong, so that the later indications are of a distinctly hopeful kind.

Risen: Dolcoath, 2½; Polberro, 4s., allowing for call (1s.); West Kitty, 5s.—Fallen: Carn Brea, 20s.; Killifreth, 5s.; South Conderrow, 5s., allowing for call (5s. 6d.).

South African Shares.

The carry-over fairly on towards completion, business was resumed in a large volume on Monday. Goldenhuis Deep led the way with a jump of ½ to 7½. Goldenhuis Southern at 16s., and Bantjes at 2½, were all high on the list. Glencairn hardened to 3½, and Primrose to over 6½. Orion were also in demand, and rose to 3½. Rand Mines advanced to 2½, and among other gold shares similarly favourably inclined were Chimes, Clewer Estate, Crown Reef, Durban, East Rand, Ferreira, Gold Fields Deep, Nigel, Simmer, United Roodepoort, Wemmer, and Worcester. Spes Bona went up ½ to 1½. In the Land Department Chartered closed slightly up on the day at 47s. 9d. Dealings on the succeeding day were on the same large scale, but attention was mainly confined to Ferreira, Henry Nourse, Kleinfontein, Meyer and Charlton, Rietfontein, Robinson, Salisbury, Sheba and Van Ryn, all of which were rather better. Jubilees went back ½, Goldenhuis Deep ½, and small reactions occurred in Chimes, Consolidated Deep, Cressus, Cressus Deep, Durban, East Rand, Goldenhuis Estate, Goldfields Deep, Langlaagte, Langlaagte Royal, Primrose, Orion, Simmer, and Wemmer. Chartered remained firm at the price of the preceding day, while Bechs and Oceana were favourably disposed. On Wednesday, Ferreira and Rand Mines were each ½ down, the former at 15½ and the latter at 21½. City and Suburban fell to 16½, Cressus Deep to 2½, and Simmer and Jack to 12½. Goldfields Deep were off at 4½, Jumpers at 6½, and New Primrose at 6½, these three being ½ lower. Robinson at 7½, Buffelsdoorn at 3½, Durban-Roodepoort at 6½, Goldenhuis Estate at 5½, and Goldenhuis Deep at 7½, together with United Roodepoort, New Cressus, Bantjes, New Heriot, Kleinfontein, Wemmer, and Van Ryn, were all ½ down. Chartered were largely dealt in, and closed at 47s. Throughout Thursday business in the South African Market was steady in tone, rather than great in volume. George Goch, on favourable reports from the property, improved to 2½, while Kimberley-Roodepoort, having been quoted up to £2, closed at 1½. Gains were also registered in Goldenhuis Estate, Orion, Princess, Roodepoort Deep, Worcester, United Langlaagte, George and May, Aurora West, Sheba, Lisbon-Berlyn, and Massi-Kessl. Crowns were ½ down at 9s., and among others that lost were City and Suburban, Consolidated Deep, East Rand, Goldenhuis Deep, Heriot, Jumpers, Knights, Langlaagte Royal, Modderfontein, Nigel, Robinson, Salisbury, Van Ryn, and

Village Main. Chartered were off colour, closing at 46s. 4½d. Both the important diamond shares were lower.

Risen: African Concessions, 1s.; Alexander Estates, 1s. 3d.; Banket, 3d.; Barrett, 6d.; Bechs, 2s.; Block B, 1s. 6d.; Booyen, 2s. 6d.; Buffelsdoorn, 1s. 3d.; Coetzestroom, 6d.; Consolidated Deep, 2s. 6d.; Consolidated Bultfontein (allow dividend), 2s. 6d.; Durban, 2s. 1d.; Eastleigh, 2s. 6d.; Exploration, 2s. 6d.; Exploring, 7s. 6d.; Goldenhuis South, 1s.; George Goch, 2s. 6d.; George and May, 1s.; Glencairn, 2s. 6d.; Graskop, 3d.; Griqualand West, 2s. 6d.; Gordon (allow dividend), 1s.; Henry Nourse, 2s. 6d.; Harmony, 1s.; Johannesburg Estates, 2s.; Johannesburg Investment, 8s. 9d.; Johannesburg Gold Fields, 6d.; Jubilee, 2s. 6d.; Kleinfontein, 5s.; Lisbon, 1s.; May Consolidated, 2s. 6d.; Mashonaland Agency, 1s. 3d.; Meyer, 2s. 6d.; Mozambique, 6d.; New Cressus, 2s. 6d.; New Jagersfontein, 2s. 6d.; New Primrose, 5s.; New Virginia, 2s. 9d.; Nigel, 2s. 6d.; Orange Free State, 10s.; Orion, 5s.; Ottos, 1s. 6d.; Paarl, 1s.; Pardy, 3s.; Pigg's Peak, 4s.; Princess, 1s. 3d.; Roodepoort Kimberly, 8s. 9d.; Roodepoort Deep, 7s. 6d.; Sheba, 3s.; Silati, 3s.; South African Trust and Finance, 2s.; St. Augustine, 1s. 3d.; South West Rand, 1s. 3d.; Spes Bona, 13s.; Spitzkop, 1s. 6d.; Stanhope, 2s. 6d.; Sutherland Reef, 4s. 6d.; Steyne, 3s. 9d.; Transvaal Exploration, 1s. 3d.; United Pioneer, 1s. 6d.; United Roodepoort, 2s. 6d.; Willoughby Consolidated, 1s. 3d.; Witwatersrand (Knights), 1s. 3d.; Wolhuter, 10s.; Worcester, 2s. 6d.—Fallen: Afrikaner, 1s. 3d.; Aurora, 1s.; Bantjes, 5s.; Buffelsdoorn, 1s. 3d.; Champ d'Or Deep, 1s.; Chartered, 1s. 6d.; City and Suburban, 5s.; Crown, 2s. 6d.; East Rand, 1s.; Ferreira, 2s. 6d.; Goldenhuis Estate, 5s.; Gold Fields of Mashonaland, 1s. 3d.; Ginsberg, 1s.; Gold Fields Deep, 3s. 9d.; Grahamstown, 1s. 6d.; Johannesburg Pioneer, 2s. 6d.; Jumpers, 2s. 6d.; Langlaagte Royal, 5s.; Lionsdale, 1s.; Luipaards, 6d.; Main Reef, 6d.; Modderfontein, 2s. 6d.; Moodies, 1s. 6d.; New Chimes, 2s. 6d.; New Cressus Deep, 10s.; New Louis d'Or, 3d.; Randfontein, 1s. 3d.; Rand Mines, 5s.; Read's, 1s. 3d.; Rietfontein, 3s. 6d.; South African Exploration, 5s.; South African Gold Trust, 2s. 6d.; Simmer and Jack, 5s.; Transvaal Estates, 6d.; Transvaal Land, 6d.; United Langlaagte, 1s. 3d.; Village, 5s.

Miscellaneous Shares.

Business for the new account was commenced fairly actively on Monday in the Miscellaneous department. Abbotts were the conspicuous share in the Westralian department, while Hampton Plains and Bayley's were stronger. On the other hand, Boulders, Kinsellas, and West Mallinas were not so firm. On Tuesday White Feather were in demand, and rose ¼ to 2½. Mawson's Reward gaining a similar advance to 1½. Bayley's Reward and Great Boulder were easier, the former dropping 1s. to 12s. 6d., and the latter closing at 14s. 6d. West Australian Concessions lost ½ to 1½, but West Australian Gold Fields continued firm at 3½. Among Indians, Mysore and Nundydroog recovered ½, and Balaghat at 4s. Mysore Wynad at 12s. 3d., and Nine Reefs at 3s. 9d., were better. Elsewhere St. John del Rey gained 1s. to 2s., and Kapanga were up 9d. to 6s. 9d. Elkhorn advanced 6d. to 11s., and Calao Bis, Caratal, and Poorman were all better. West Australians were active on Wednesday, and fairly strong throughout. Bayleys recovered to 13s. 6d., and rises occurred in Hampton Lands, Mawsons, Big Blow, and Coolgardie (Sherlaw's). Gold Fields, Abbotts, White Feathers, and Austins remained hard. Among Indians, Champion Reef, Mysore Gold, and Ooregum were all better. Westralian shares were again better on Thursday. Austins were prominent at a rise of ½ to 1½. Mawsons, Concessions, Mining, Sherlaws, and Lady Mary and Gold Fields, White Feathers, Abbotts, and others were briskly dealt in. Among the other Miscellaneous shares, there were most active dealings in Barrett, Spitzkop, Graskop, Dickens Custer, and La Yesca. Both Balkis shares are weaker, and Poorman lost something of their recent improvement.

Risen: Australasian, 1s. 3d.; Balaghat, 9d.; Bonnie Dundee, 1s.; Broken Hill Proprietary (allowing for dividend), 1s.; Burma, 1s.; Cape Copper, 1s. 3d.; Caratal (allowing for dividend), 6d.; Carrington, 3d.; Champion Reef (allowing for dividend), 3s.; Cumberland, 1s.; Dickens Custer, 6d.; Elkhorn, 6d.; Golden Gate, 3d.; Holcomb, 9d.; Idaho, 3d.; Kabonga, 3d.; Kapanga, 2s.; La Yesca, 3d.; Macato, 1s. 3d.; Mosman, 6d.; Mysore West, 1s.; Mysore Wynad, 1s.; Namaqua, 1s. 3d.; New Queen, 1s. 3d.; Nundydroog, 1s. 3d.; Poorman, 1s. 3d.; St. John del Rey, 2s.; Springdale, 3d.; West Argentine, 6d.—Fallen: Australian Broken Hill, 3d.; Argentine Concession, 9d.; Brilliant, 6d.; Brilliant Hill (allowing for dividend), 1s. 6d.; British Broken Hill, 6d.; Callao Bis, 3d.; Day Dawn P.C., 6d.; Don Pedro, 6d.; Glenrock, 3d.; Golden Leaf, 3d.; Gravel Gold, 6d.; Harquahala, 6d.; Kangarilla, 2s.; Mills' Day Dawn, 1s. 3d.; Montana, 1s. 6d.; Guston, 1s. 3d.; Orita, 6d.; Palmarejo, 3d.; Pestarena, 6d.; Pinos, 6d.; Waihi (allowing for dividend), 1s. 6d.; Yerracoada, 3d.

Australian.

Risen: Abbott's, 1s. 3d.; Austin, 3s. 9d.; Hampton Lands, 1s. 3d.; Hampton Plains, 2s. 6d.; Mawson, 2s. 6d.; West Australian Consolidated, 2s. 6d.; West Australian Gold Fields, 2s. 6d.; White Feather, 1s. 3d.—Fallen: Bayley's, 9d.; Blackett's, 1s. 3d.; Consolidated Gold Mines, 5s.; Great Boulder, 1s. 6d.; West Australian Mining, 6d.; West Mallina, 3d.

STOCK EXCHANGE SETTLING DAYS.

Settling Days on the Stock Exchange are as follow:—

CONSOLS, Friday, February 1, 1895.

STOCKS AND SHARES.

Continuation Days.	Ticket Days.	Pay Days.
Tuesday, Jan. 29	Wednesday, Jan. 30	Wednesday, Jan. 16
Tuesday, Feb. 19	Wednesday, Feb. 13	Thursday, Jan. 31
Tuesday, Feb. 26	Wednesday, Feb. 27	Thursday, Feb. 14
Tuesday, Jan. 15		Thursday, Feb. 28

FORTHCOMING MEETINGS.

* We shall be obliged if Secretaries or other Officials of Mining, Railway and other Companies will be good enough to advise us as early as possible of the date, time and place of their forthcoming meetings whether statutory, semi-annual, annual, general or extraordinary, confirmatory or adjourned—in order that particulars may be announced for the benefit of our subscribers and more particularly our country readers. Balance sheets, reports and other matter to be submitted at such meetings should, where possible, accompany the intimations of the meetings sent.

Name of Company.	Place.	Nature of Meeting.	Date.	Time.
Exploring Company	Cannon Street	General	Jan. 21	12 noon
Rajah Gold Mines	Winchester Ho.	General	Jan. 21	2.0 p.m.
Gold Estates (Transvaal)	Cannon Street	General	Jan. 21	2.30 p.m.
Imperial British E. Africa	Winchester Ho.	General	Jan. 21	2.0 p.m.
Le Champ d'Or French G.M.	Paris	General	Jan. 21	3.30 p.m.
Emerald Gold	Winchester Ho.	General	Jan. 22	12 noon
Waihi Grand Junction S.S.	Winchester Ho.	General	Jan. 24	12 noon
Gold Fields of Mysore	Cannon Street	General	Jan. 24	3.0 p.m.
White Feather	Winchester Ho.	General	Jan. 25	12 noon
New Pittsburg Gold Mines	9, Copthall-av	General	Jan. 25	12 noon
South African Gold Trust	Cannon Street	General	Jan. 25	12.30 p.m.

NEW ISSUES.

THE NEW ZEALAND JUBILEE GOLD MINE (LIMITED).

The share capital of this new company is £100,000, divided into 100,000 shares of £1 each. "It is formed," says the prospectus, "for the purpose of acquiring and working on an extended scale a large and rich mining special claim named 'The Jubilee,' having an area of 103 acres 15 perches, and situated in the Upper Thames District, North Island, New Zealand. The property entirely surrounds the Waitakauri Company's Mine, which has produced gold to the extent of upwards of £80,000, and the reefs which have produced this amount of gold are proved by their underlay and extensions to pass through the Jubilee property. It is also in the same district as the celebrated Waihi Gold Mine, and is stated to be identically the same geological formation. The property was acquired by the New Zealand Jubilee Syndicate (Limited) in the month of May, 1893, from Mr. Cooper, who has since been employed in its management and development on behalf of the syndicate. At the time of the sale of the property to the syndicate, the present vendor, Mr. E. A. Thompson, secured an option over it which he has now exercised, such option having been obtained prior to the recent important developments, in the neighbouring Waihi property.

"Upwards of £11,000 has been expended upon the development and equipment of the mine, and Mr. Bohm states in his report that there are now in sight, ready for immediate extraction and treatment, 25,000 tons of ore as follows:—

Ore in sight at Queen Low Level, 20,000 tons, value 1 ounce per ton, at £3	£60,000
Ore in sight Alexandra Gully, say, certainly 5000 tons (but probably much more) at £10 per ton	50,000
Total	£110,000

Estimated cost of production and treatment at £1 10s. per ton

37,500

Net value of ore in sight

£72,500

"Mr. Cooper, in his report, states that about 9 tons of ore, which he brought from the Alexandra Gully, and which he divided into three classes, were sold by Messrs. Johnson, Matthey and Co., to the smelters at the rate of—

No. 1	£80 10s. per ton.
No. 2	£30 0s. "
No. 3	£7 12s. "

and that 9 tons of ore taken from Butler's reef were sold to the smelters for £19 15s. per ton. It is estimated by Mr. Cooper, that, upon the completion of the cyanide plant (now in course of construction) the company will be able to treat 20 tons of assorted ore per day of a class that should yield at least £8 per ton, and after making a liberal allowance for mining and treatment expenses, he estimates a minimum profit of £5 per ton, which would be equal to £100 per day, and, allowing for working 300 days in the year, should pay a yearly profit of £30,000. There is an ample supply of water for boiler and battery purposes, and it is believed that the above production of gold can be largely increased by the addition of crushing machinery, for which the working capital now provided will suffice."

MOORE'S RHODESIA CONCESSION (LIMITED).

The prospectus of this company, of which we gave some particulars last week, is now advertised. The company has been formed to acquire a concession granted by the British South Africa Company to Mr. Henry Clay Moore, giving exclusive rights of mining minerals and metals over about 75 square miles in Matabeleland and Mashonaland, subject to the mining regulations of the Chartered Company. This concession, the prospectus states, is regarded as quite exceptional, and covers a greater area than can probably again be acquired under one grant. Mr. Moore, utilising his knowledge of the country, and having satisfied himself of the existence of old workings and reefs in the neighbourhood of the Mazoe river, made selection of his ground in that district. Mr. D. Tyril Laing, who was four months on the concession with a party of prospectors, writes, in his report dated August 23, 1893, as follows:—"On the concession I know of nine quartz reefs that carry gold, &c. . . . Some of these reefs have been prospected to depths ranging from surface cuttings to shaft 50 to 30 feet deep.—Water. The concession is well supplied with water—three small rivers and several good-sized streams run across its surface.—Timber. There are seven different kinds of timber growing on the property, which will be found useful for mining and other purposes. . . . The supply would last for many years." And he adds, as the result of his prospecting:—"The foregoing facts go to prove that the different formations in Moore's Concession and the district which surrounds it, are highly favourable for the occurrence of highly-mineralised gold-bearing lodes, many of which will shortly be proved beyond doubt, and their stability established, and, if worked on an economical system will, in my opinion, prove dividend-paying." It is proposed to systematically prospect the whole concession, and to further open up the most promising of the reefs referred to above, with a view to the formation of subsidiary companies to work them. The Beira Railway, now completed to Chimio, will greatly facilitate the transport of machinery and goods into Rhodesia. The purchase consideration is £100,000, payable as to £10,000 in cash, £50,000 in fully-paid shares, and the balance of £40,000 either in cash or shares at the directors' option. This includes the amounts payable to Mr. Moore, and to the Chartered Company under its mining regulations. The capital is £150,000, in 150,000 shares of £1 each, of which 100,000 are now offered to the public. We gather from the prospectus that £50,000 will be available for working expenses.

THE ROTHERY BLOCK GOLD MINE (LIMITED).

The capital of this company is £120,000, in 120,000 shares of £1 each, of which 60,000 are now offered for subscription. "It is formed," says the prospectus, "to acquire and work a valuable gold mining property, known as the Rothery Block, in the Randfontein district, South Africa, traversed by the Witwatersrand Main Reef series. The property is situated on the farm 'Middleveld,' about 24 miles west of Johannesburg, and 9 miles south-west of Krugersdorp station on the Rand Railway. It consists of a block of 92 claims, an area equal to about 127 English acres, in immediate proximity to the Randfontein Estates Company, and is traversed by the same Main reef series. The reefs have been traced through the entire length from north to south, a distance of 3200 feet. The block is four claims deep throughout (in one part five), or a total breadth of 1600 feet. The property has been reported on by Mr. E. G. Woodford, late State Mining Engineer of the Transvaal, M.A.M.I.E., M.I.M.E., &c., and by Mr. S. Pedersen, manager of the Randfontein Estates Company. The former in his report says, 'Practically you have at least seven blanket beds on your ground, and without doubt more will be found if mining is done; they are the same series, and are iden-

ti a ... the reefs of the Randfontein Estates Company." The list closer earlier than was anticipated. We hear that the shares have been well applied for.

COMPANY FINANCE.

Reports, Balance Sheets, Dividends, &c., of Mining and other Companies.

Southern Geldenhuis (Limited).

The following circular, dated January 15, has been sent to the shareholders:—"Mr. A. T. Champneys, M.E., the late manager of the New Primrose Gold Mining Company, being in the neighbourhood of this company's property, a report has been made by him upon our mines for the directors, which report is annexed, and which in their opinion confirms all former reports as to the value of the property:—Johannesburg, December 13, 1894. Dear Sirs,—In accordance with your instructions I visited your property, situate on the Farm 'Elandsfontein No. 2,' some five miles to the south-east of Johannesburg, on the 'Witwatersrand Gold Fields.' The property consists of a block of thirty-two claims as per surveyed plan, to which is attached a further two claims, and water-right situated on the Natal Spruit.—Reefs: As far as the open cuttings and mining operations disclose, there are series of three distinct strata of banket formation, enclosed within sandstone walls, running throughout the entire length of your property.—Classifications: North reef, 8 feet thick; middle reef, 2 feet 6 inches, with sandstone horse of 18 inches separating from lode of 2 feet. Southern reef 4 feet thick. These reefs all dip to the south at an angle varying from 55 to 60 degrees. The whole formation, which is distinctly traceable throughout the property, is intersected by numerous workings, and discloses a milling matter throughout, varying in richness from 5 to 12 dwts. per ton milling value.—Water right: Your water right contained within an area of 240,000 square feet, which is situated immediately to the south on the Natal Spruit of the Jumpers Gold Mining Company's claim, is of inestimable value to your property, for the following reasons:—Water derivable from this source equal to supply for 800 stamps. The natural facilities for conserving water are unequalled, owing to the natural gorge and formation through which the stream runs, also the situation of the water right and proposed site of dam would greatly cheapen your cost as regards mining and milling operations. It may be noted that in the early days of the Witwatersrand fields, this water right was made available for driving the stamping powers of the Jumpers Gold Mining Company.—General. I must inform you that while taking into consideration the value of the reefs which have their outcrop on your claims, that the whole of the Main Reef series—which means the Jumpers and Geldenhuis Estate Companies' reefs—all dip immediately under your property, and also the late rich strike of the Rand Fields, known as the East Rand Proprietary Mines, which assays, according to Standard Bank assays, over 4 ounces to the ton, which ground is situated immediately to the north of your property, and consequently would be struck in your property at an easy mining depth. The series of reefs traversing the property have been located by several eminent geologists, and are considered to be the Elsberg, or what is more popularly known as the Chimes and Van Ryn series. Your facilities for working the property are most favourable, the reefs are most distinct, the natural formation of the ground adapt themselves for economical working, and I consider that the reefs, after being exploited to a depth of 100 feet, would warrant the erection of a 100 stamp mill. Owing to the natural facilities aforementioned there is every reason to doubt that a small expenditure would entirely prove that the mining and milling with cyanide works should give a very handsome return, as the total cost of working the same should not exceed 3 to 4 dwts. per ton, which would allow an ample margin for profits. Fire assays since made from samples taken from the workings give as high as 1 ounce 5 dwts. to the ton. This is an average from open works. In conclusion, I beg to state that it is my distinct opinion that this property is a valuable one, and under judicious management should yield handsome returns.—I am, dear Sirs, yours respectfully, (Signed) A. T. Champneys, M.E., late Manager New Primrose Gold Mining Company."

—The SOUTH AFRICAN GOLD TRUST (LIMITED), notifies that, in order to prepare for the dividend of 6s. 6d. per share recommended by the board, the transfer books of the company will be closed from January 21 to February 2, inclusive.

—The directors of the YERBAKONDA GOLD MINING COMPANY (LIMITED) have made the first allotment of shares to shareholders in the South-East Mysore Gold Company (Limited), in liquidation. The capital was largely over-applied for, admitting only of a *pro rata* allotment, in respect of "additional shares," of one share for every 28 shares applied for. Captain William Bell McTaggart, the Chairman of the Nundydroog Company (Limited), has joined the board.

—Messrs. Thomas Southcott and F. Stobbs, liquidators of the TALTAI (CHILI) NITRATE COMPANY (LIMITED) notify the declaration of a first dividend of 3s. 4d. in the £.

—The CHAMPION REEF GOLD MINING COMPANY OF INDIA (LIMITED) have sold the gold produced in November for £21,416 11s. 0d.

—The MYSORE REEFS GOLD MINING COMPANY (LIMITED) (in liquidation) has sold the gold obtained in November for £186 18s. 4d.

—The MYSORE GOLD MINING COMPANY (LIMITED) has sold the gold obtained during the month of December last, which realised £17,984 4s. 1d.

—The NUNDYDROOG COMPANY (LIMITED) has sold the gold obtained during the month of December last, which realised £11,585 18s. 3d.

—The BALAGHAT MYSORE MINES (LIMITED) has sold the gold obtained during the month of December last, which realised £484 2s. 2d.

—The OUBO PRETO GOLD MINING COMPANY (LIMITED) has sold the gold obtained during the month of November, which realised £4593 11s. 6d.

—The directors of the STANHOPE GOLD MINING COMPANY (LIMITED) have declared a dividend of 20 per cent.

—The WEST AUSTRALIAN GOLD CONCESSIONS (LIMITED) announces that the warrants for the interim dividend, declared on January 8, of 1s. per share, have been posted.

—The STANHOPE GOLD MINING COMPANY (LIMITED) have declared a dividend of 20 per cent., payable to all shareholders registered on January 31.

The numerous friends of Mr. Begelhole, whose name has become so familiar in London in connection with Western Australia, held a dinner in his honour at the Criterion on Thursday last. Mr. Charles Warner and other well-known professionals enlivened the evening with song and recitation. Captain Begelhole started for Western Australia yesterday.

REVIEW.

AFRICAN GOLD.

"Afrika in seiner Bedeutung für die Goldproduktion in Vergangenheit, Gegenwart und Zukunft." Von Dr. Karl Fütterer. (Berlin, 1895.)

This modest work is a monument of patient research and painstaking compilation. The literature of African gold, from the 39th century B.C. down to A.D. 1894, has been ransacked for it; records in dead and living languages have been drawn upon; and facts which may be hidden even in such obscure publications as the Proceedings of the Association for Promoting the Discovery of the Interior Parts of Africa, dating from 1810, have been unearthed to add to its completeness. But the question may very pertinently be asked—To what purpose? and the answer will be dubious. If voluminous statistics, of more or less uncertain character, are wanted, they will be found here. If a map of an Upper Egyptian gold district is of interest, here is a facsimile of one from a papyrus in Turin, proclaimed to be "the oldest topographical map," which the irreverent might be excused for likening to a picture of encaustic tiling. If the opinions of Agatharchides (113 B.C.) and other learned ancient Greeks are sought, they may here be studied in modern German. If a record of every passage in which the word "gold" occurs in every writing of every traveller who ever visited any part of the African continent is desired, that desire can here be gratified. To the historian, the geographer, the archaeologist, and the statistician, the book will be welcome and, indeed, valuable. To the miner, the millman, and the metallurgist, it makes no appeal. Of the 200 and odd pages composing the volume, 8 only are devoted to a very brief sketch of the occurrence of gold in Nature, and 4 to a review of the methods of its extraction, these subjects being put in the form of an introduction. The several chapters proper embrace:—

1.—East North Africa—Egypt, Nubia, East Soudan, Galla, and Somali lands; 34 pages.

2.—Central and West North Africa—Tripoli, Tunis, Algiers, Morocco, Sahara, West Soudan, Senegambia, and Guinea; 58 pages.

3.—Equatorial and South Africa—Cameroons, Congo, Sunda, Damara, and Namaqua lands; 8 pages. British South Africa and Orange Free State, 5 pages. Transvaal, 36 pages. Zambesia, &c., 18 pages.

A "Conclusion," covering 11 pages, is chiefly statistical. The bibliography, filling 10 pages, and citing all but 300 works, is, perhaps, the most useful feature in the volume; it is very complete, and, for the most part, accurate, though one hardly looks to find "McQueen" indexed under "Q."

Dr. Fütterer has, perforce, culled copiously from British authorities; and, in addition to the long list of travellers quoted, the more important writings of Alford, Dorsey, Gibson, Liddell, Penning, Sawyer, Stow, and others are largely laid under contribution. While this feature will be appreciated by the author's own countrymen, English readers will probably prefer the originals. A very interesting abstract from Agatharchides gives a description of a quartz mill with iron stamps and stone mortars, which shows to what great antiquity the original stamp battery may be traced; and a quotation from Russegger evidences a knowledge and application of hydraulics in ground sluicing among native negroes which was scarcely to be expected.

Illustration is not a strong point of the book. The frontispiece, representing a very unmineral-like individual, accompanied by two females, who are conspicuous for lacteal developments and limited attire, panning gold in a tiny puddle, has a very amateur air about it. But the cartography is good. Besides an excellent general map (folded) showing the occurrence of gold throughout Africa (scale, about 300 miles=1 inch), there are numerous page maps of special districts, including Ethbi, Um-Eleacha, and Um-Roo (after Floyer), Wadi-Ollaki (after Bellefons), Fassaki and Chor-Adi (after Russegger), Bondou and Bambouk (after Lamartiny), Assinie (after Chapar), Wassaw and Ahanta (after Dahse), Gorman South-West Africa (original), Transvaal (original), Witwatersrand (after Gibson), West Witwatersrand (after Penning), Matabel and Mashonaland (after Sawyer), and the gold fields north of the Zambesi (source not acknowledged).

The cost of the book is only 8s. stitched, or 10s. bound.

THE Weekly Sun for January 27 will contain a character sketch of the Right Hon. Cecil Rhodes, from the pen of a prominent member of the House of Commons. The writer will critically discuss therein the administration and policy of this brilliantly daring statesman and financier, from a South African and an Imperial standpoint.

SOUTH AFRICAN GOLD EXPORT.—The Union Line steamship Trojan took on the 16th inst., gold for Europe to the value of £188,000.

EXPLORING COMPANY (LIMITED).—The register of members is closed from 17th to 21st inst. inclusive.

THE AFRICAN GOLD RECOVERY COMPANY (LIMITED) announce that 54,000 ounces of gold have been recovered at the Rand, and 8000 ounces in other districts, total 62,000 ounces, during December by means of their MacArthur-Forrest cyanide process. The November total was 65,000 ounces.

SILVER FOR CHINA.—A cable, dated Denver (Colorado), January 14, states that several hundred ounces of silver bullion have been shipped by the local smelters direct to China.

J. W. VICKERS.—The general advertising offices have been removed during the rebuilding of No. 5, to adjoining premises, No. 7, Nicholas-lane (first floor).

ELMSLIE (LIMITED).—The secretary writes:—The net profits of the London branch office for the quarter ending 31st December show a return on the authorised capital of 14½ per cent. per annum. The Australian branches are also doing well, and the dividend in March next is expected to be 15 per cent. on the preference shares.

QUEENSLAND GOLD OUTPUT.—The official returns for 1894 show an increase of 57,000 ounces, as compared with 1893.

NITRATE OF POTASH IN CAPE COLONY.—A company is about to be issued for the purpose of developing some discoveries of nitrate of potash just outside the Doornaberg range, and to the south of the borders of Griqualand West, situated about 100 miles from De Aar Junction, on the main line from Cape Town.

MOUNT LEYSHON.—The Mount Leyshon (Limited) have received the following cablegram, dated January 16, from their manager at Charters Towers, giving the fortnightly crushing:—1400 tons crushed, 232 ounces gold; 40 stamps mill ran 10 days; profit, £32 10s.

SPRINGDALE GOLD.—Advices received under date January 1: Expect to commence milling Mountain Lion ore at the rate of 20 tons per day about February 1. The 15 stamp mill at Pine Creek will commence on gold standard ore about the same time, pending contemplated erection of 100 ton mill in the spring.

"THE IMPERIAL INSTITUTE JOURNAL."—This is the title of the new publication issued with the first week of the New Year by the Imperial Institute authorities. It has for its object the dissemination of useful information to the Fellows of the Institute who live far away from the metropolis, and, judging by the first number, we have no hesitation in saying that the intention will be efficiently carried out.

THE METAL MARKETS.

LONDON METAL MARKET.

THE METAL MARKET, LONDON, JANUARY 17.

Copper.

THE speculative market opened a shade firmer, and business took place at £40 12s. 6d. a.c., and £41 three months, the turn-over for the day amounting to about 350 tons. On Tuesday, on the publication of the fortnightly statistics, showing a decrease of 600 tons for first half of January, the value again improved a fraction, £40 13s. 9d. a.c. being done. On Wednesday, £40 15s. a.c. and £41 12s. 6d. three months were recorded, and these prices were again done on Thursday, three months being, however, treated at 1s. 3d. reduction before the close, a few selling orders keeping the market in check. To-day, after business at £40 17s. 6d., £40 18s. 9d., and £41 s.c., and up to £41 7s. 6d. three months, the market closes firm at £41 buyers of s.c. and £41 7s. 6d. buyers of three months. America continues firm, through in some quarters a shade lower prices might be accepted. Consumptive demand here is quiet.

Tin.

This article opened with a continuation of the downward movement which was in progress last week, and £58 15s. a.c. Straits, and £59 three months were done during Monday. Tuesday brought scarcely any quotable alteration, but on Wednesday a recovery was caused by moderate buying, and the value sprang quickly to £59 15s. three months relapsing before the close to £49 5s. and £59 7s. 6d. respectively. Yesterday fresh buying stiffened the market again, £59 10s. s.c., £59 17s. 6d., and £59 15s. three months being paid. To-day further buying orders were in the market, and the price rose rapidly, the market closing very firm at £60 15s. to £61 s.c., three months. Biliton tin opened at 35½ fl., declined ½, and closed firmer at 36 fl.

Pig Iron.

In Glasgow, the market opened steady at 41s. 6½d. s.c. Scotch, improved to 8d. and then varied between that and 41s. 6d., closing at 41s. 8½d. sellers. Hematite is quoted 42s. 7½d. and Middlesborough 34s. 8d. Shipments last week were 3704 tons, or 78s. over those of the parallel week of last year.

Lead.

closes quite firm at £9 12s. 6d. to £9 13s. 9d. for soft foreign, and £9 15s. to £9 16s. 3d. English.

Spelter.

is likewise firmer at £14 5s. to £14 6s. 3d. for ordinaries, and £14 7s. 6d. for specials.

Antimony.

is quiet at £32 10s.

Quicksilver.

is without change at £6 11s. 6d. seconds, and £6 12s. 6d. firsts.

The following are to-night's (January 18) prices of metals:—

	Copper.	£ s. d.	¢ s. d.
Tough cake and ingot	...	43 10 0	44 0 0
Best selected	...	44 5 0	44 15 0
Sheets and sheathing	...	51 13 0	52 0 0
Flat bottoms	...	54 15 0	55 0 0
Chili bars	...	41 0 0	41 7 6
Good malleable, spot, & 3 months respectively	...	41 0 0	41 7 6
Copper tubes, seamless	0 0 7½
BRASS: Wire	0 0 5
" Tubes (solid drawn)	0 0 5½
" Sheets	0 0 5½
PHOSPHOR BRONZE: Alloys II.	78 0 0
" III. or V	81 0 0
" VII.	83 0 0
" XI.	78 0 0
" Vulcan brand Al	72 0 0
DURO METAL	73 0 0
BULL'S METAL	65 0 0
FERROBRONZE (Vivian's).
Ingot	...	0 0 8½	...
Ordinary sheets, plates, bolts and bars	...	0 0 8½	...
Screw bolts and nuts	...	0 0 8	...
Pump rods, plain	...	0 0 7	...
" finished	...	0 0 10	...
DELTA METAL: No. 4 (per ton)
" Sheets and plates (per lb.)
" Bars, round, square, flat (per lb.)
" hexagon (per lb.)
Tin.
English, ingots, f.o.b.	...	63 5 0	63 13 0
" refined	...	64 5 0	64 15 0
" bars	...	65 5 0	65 15 0
Straits, spot and 3 months respectively	...	60 17 8	60 17 8
Australian spot, and three months respectively	...	61 0 0	61 0 0
Banca, (in Holland)	...	62 17 8	61 0 0
TIN PLATES: Charcoal, best quality	...	0 12 0	0 14 0
" ordinary	...	0 10 0	0 14 0
" Coke, best quality	...	0 9 0	0 10 0
" ordinary	...	0 9 0	0 9 6

These prices of tinplates are f.o.b. at Swansea; at Liverpool 6d. per box more.

Fig. G.M.N. f.o.b. Clyde, spot	...	2 11 0
" Scotch pig. No. 1 Gartaherrie	...	2 14 6
" bars	...	2 10 0
" Clyde	...	2 9 0
" Govan	...	5 0 0
Bars, Welsh, f.o.b. Wales	...	5 0 0
Plates	...	5 2 6
Bars, Staffordshire, at works	...	6 7 6
Plates	...	6 8 0
Hoops	...	6 10 0
Ship plates, Middlesborough	...	4 10 3
STEEL: English spring	...	10 0 0
" cast	...	42 0 0
" Rails at works, according to section	...	3 12 6
Spanish or soft foreign	...	9 12 6
English pig, common	...	9 15 0
" L.B.	...	10 5 0
" sheet	...	10 17 6
" bar lead	...	10 10 0
" pipe	...	11 7 6
" red	...	12 8 0
" white	...	12 8 0
" patent shot	...	14 0 0
Silesian ordinary brands	...	14 5 0
" special brands	...	14 7 6
English swansons	...	14 17 6
Sheet Zinc	...	17 12 6
Antimony	...	32 10 0
Antimony 75 lbs. warrants	...	6 11 6
Ores, c.i.f., U.K. ports	...	8 0 10½
1st quality, 50 per cent. and upwards	...	0 0 11½
2nd " 47 per cent. to 50 per cent.	...	0 0 9
3rd " 40 " 47 per cent.	...	0 0 8
98-99½ per cent. (guaranteed 98 per cent. min.) in ingots (1 cwt. lots)	...	0 1 8
do do (1 ton lots)	...	0 2 7
99-99 per cent. guarantee	...	0 1 4
Nickel.

WEST ARGENTINE.—The following cablegram has been received from New Zealand: "Tipperary Mine.—The low level adit tunnel has struck a seam of gold ore. Will telegraph again in the course of a few days."

WOLHUTER.—Crushing for December, 1830 ounces, 3558 tons; 915 ounces from tailings.

SIMMER AND JACK GOLD MINING COMPANY.—The London office has been removed to 8, Old Jewry, E.C.

ABBREVIATIONS AND REFERENCES.—The following are the significations of the abbreviations and references which occur in the Share List:—*Ay*, Antimony; *A*, Arsenic; *Bl*, Blende; *Bx*, Borax; *C*, Copper; *D*, Diamond; *G*, Gold; *I*, Iron; *M*, Mende; *N*, Nitrate; *P*, Phosphate; *Q*, Quicksilver; *R*, Ruby; *S*, Silver; *S-I*, Silver-lead; *Sw*, Sulphur; *T*, Tin; and *Z*, Zinc. In the "called up" column of British Mines, signifies that the mine is conducted on "Cost Book" principle; in the "African Mines" column, signifies that the address given is not that of the head office, but of a sub- or transfer office; and 1, following the names of African mines, signifies that they are subject to the Limited Liability Law of the South African Republic.

The following is by far the most complete and comprehensive list of mines, in whose shares business is being currently transacted, published. Additions will be made from time to time as occasion requires. Every effort is made to ensure accuracy, and Secretaries of Companies, Share dealers, and our readers generally, are cordially invited to co-operate with us to this end, by notifying us of any errors that may at any time occur. We desire it to be understood that, while our Share List will almost invariably be found correct; we do not hold ourselves responsible for any loss or inconvenience that may arise from possible inaccuracies.

INDIAN AND ASIATIC MINES

Name.	Closing Price. Jan. 19, 1895	Closing Price. Jan. 11, 1895.	Par.	Latest Dividend.	Called up per Share.	Amount of Stock or No. of Shares Issued.	Situation of Mine.	Head Office.
Asia Minor Pref. <i>Sl.</i>	—	—	£ s. d.	—	£ s. d.	—	—	—
Do. Ord. ...	—	—	0 10 0	—	0 10 0	42,430	Asia Minor ...	2, Metal Ex. Bldgs.
Balaghat Mysore <i>G</i>	4/9 5/3	3/-	1 0	—	0 9 0	51,584	Asia Minor ...	2, Metal Ex. Bldgs.
Burma Ruby ... <i>R</i>	1/4 1/2	6/8	1 0	—	0 19 0	160,000	India	6-7, Queen-street-pl.
Champion Reef ... <i>G</i>	4 1/2 4 1/2	4 1/2	1 0	3/- Jan. '95	0 17 0	300,000	Burmah	Suffolk House, E. C.
Colar Central ... <i>G</i>	7/8 1/2	7/8	1 0	—	1 0 0	200,000	India	6-7, Queen-street-pl.
Coromandel ... <i>G</i>	5/- 6/-	2/6	1 0	—	0 13 9	85,000	India	Dashwood Ho., E. C.
Deväla Moyer ... <i>G</i>	—	—	1 0	—	0 10 0	200,000	India	4a, Nicholas-lane.
Gemming and Mining	—	—	2 0	—	1 7 8	19,594	Ceylon	183, Gresham House
Gold Fildä Mysore <i>G</i>	19/- 21/-	19/-	1 0	1/- July '93	1 0 0	220,000	India	6-7, Queen-street-pl.
Gold Fildä Siam <i>G</i>	—	—	1 0	—	1 0 0	150,000	Slam	19, St. Swithin's-lane
Hyderabad Dec. ...	9 1/2 9 1/2	10	1 0	—	10 0 0	115,000	Deccan	16, St. Helen's-place
Kempinkote GdFd	3/- 3/6	3/-	0 5	—	0 3 6	665,473	India	6-7, Queen-st. place.
Mysore ... <i>G</i>	2 3/4 2 3/4	2 3/4	1 0	1/- Nov. '94	1 0 0	250,000	India	6-7, Queen-street pl.
My. Barnhall ... <i>G</i>	2/3 2/9	2/3	1 0	—	0 12 0	100,000	India	2, East India Avenue
Mysore Reefs ... <i>G</i>	5/6 6/-	5/6	1 0	—	1 0 0	134,788	India	6-7, Queen-street-pl.
Mysore West(N)G	12/6 13/6	11/6	1 0	—	0 19 0	127,408	India	Dashwood Ho., E. C.
Mysore Wynad <i>G</i>	11/8 12/6	10/8	1 0	—	0 19 0	250,000	India	Dashwood Ho., E. C.
Nine Reefs ... <i>G</i>	3/8 4/	3/8	0 10	—	0 10 0	50,000	India	6-7, Queen-street-pl.
Nundydroog ... <i>G</i>	1 1/2 2 1/4	1 1/2	1 0	1/6 Dec. '94	1 0 0	200,000	India	6-7, Queen-street-pl.
Ooregum (D. O. G.)	3 3/4	3 1/2	1 0	2/6 Nov. '94	1 0 0	145,000	India	6-7, Queen-street-pl.
Do. (10% Pref.).	2 3/4	2 3/4	1 0	2/6 Nov. '94	1 0 0	95,536	India	6-7, Queen-street-pl.
Do. (10% Pref.).	2 3/4	2 3/4	1 0	2/6 Nov. '94	0 5 0	24,464	India	6-7, Queen-street-pl.
Pahang Corp'n. <i>T</i>	8/6 9/-	8/6	1 0	15% Apr. '89	1 0 0	203,070	Malay Penin.	Blomfield Ho., E. C.
Pahang Kabang <i>T</i>	3/8 3/4	1/4	1 0	—	1 0 0	394,760	Malay Penin.	4a, Jeffrey'ssq., E. C.
Yerrakonda ... <i>G</i>	3/9 3/3	3/-	0 4	—	0 2 6	—	Mysore	6 7, Queen-street-pl.

Alaska Treadwell.....G	1 1/4	1	\$5	7 1/2-d. Nov. '94	\$25	160,000	Alaska.....	30, St. Swithin's-lm.
Alaska Treadwell.....G	2 2/3 3/4	2 1/2	\$25	1/6 Oct., '94	\$35	203,000	Alaska.....	31, St. Swithin's-lm.
Alameda and T...S	-7/3 -1/6	-1/16	2/6	-	0 2 6	351,008	Mexico.....	6, Queen-street-plac
American Belle.....S	1/- 1/8	1	0	-7/8 Mar. '91	1 0 0	398,890	Colorado.....	25A, Old Broad-street
Anglo Mexican.....S	-	-	0	3/- Jan. '90	5 0 0	74,850	Mexico.....	23, College Hill.
Arizona (Prof.) Cu	10/- 10/-3	9/9	4 0	7/- Nov. '94	4 0 0	158,920	Arizona.....	74, Geo.-st., Edinbor
Do 10% Deben.	63	62	100 0	-	100 6 0	2,560	Arizona.....	74, Geo.-st., Edinbor
Big Creek.....Ag.	2/8 3/8	2/5	1 0	1/- Dec. '91	1 0 0	60,000	Nevada.....	2, Pancras-lane, E.C.
California.....G	-	-	0 10	-7/8 May '90	0 8 9	129,571	Colorado.....	St. George's Ho. E.C.
Canadian Phos. F	-	-	1 0	-7/8 Nov. '90	1 0 0	73,334	Canada.....	155, Fenchurch-st.
Colorado Boy.....S	-	-	1 0	-	1 0 0	112,491	Colorado.....	Abchurch-chhrs. E.C.
Cortez.....S	-	-	1 0	3% Feb. '93	1 0 0	300,000	Nevada.....	Suffolk House, E.C.
Deatur.....SL	-	-	1 0	-	1 0 0	32,500	Colorado.....	35, Queen Victoria-st.
Do.....(Prof.)	-	-	1 0	-	1 0 0	12,500	Colorado.....	35, Queen Victoria-st.
De Lamar.....GS	27/ 38/	27/-	1 0	1/- Jan., '95	1 0 0	400,000	Idaho.....	36, Draper's-gardens.
Dickens CusterGS	2/3 2/9	1/9	1 0	-	0 19 9	420,000	Idaho.....	Winchester Ho. E.C.
Elkhorn.....S	10/8 11/8	10/-	1 0	-7/9 Dec. '94	1 0 0	175,007	Montana.....	6, Draper's-gardens.
Emma.....S	-7/9 1/-	-7/8	0 5	-	0 5 0	403,618	Utah.....	15, Geo.-st., Mansn. Ho.
Flagstaff.....S	-	-	1 0	-	8 19 9	240,000	Utah.....	Dashwood Ho., E.C.
Flek.....G	-	-	1 0	6d May, '94	1 0 0	134,000	Colorado.....	5, Fenchurch-st.
Garfield.....GS	-	-	1 0	-7/8 Dec. '93	0 19 6	98,185	Nevada.....	Suffolk House, E.C.
Golden Feather G	7/- 8/-	7/-	1 0	-	1 0 0	180,000	California.....	8, Stephen's-Cs E.C.
Golden Gate.....G	4/- 5/-	4/-	1 0	-	0 19 6	79,600	California.....	8, Stephen's-Cs E.C.
Golden Tan.....G	2/9 3/3	3/-	1 0	-	1 0 0	300,259	Montana.....	8, Draper's Gardens
Golden Valley.....G	1/3	1/3	1 0	-	0 19 0	55,507	Colorado.....	15, Angel Court.
Hargnash.....G	5/- 6/-	5/8	1 0	-7/8 Oct., '94	1 0 0	300,000	Arizona.....	6, Drap-'s Gardens
Holcomb Valley G	3/3 2/9	1/3	0 5	-	0 5 0	540,300	California.....	14, Cornhill. E.C.
Idaho.....GS	2/3 5/8	3/8	0 5	-7/2 Dec. '94	0 4 8	143,439	Idaho.....	140, Le-denhall-st.
Jackson Goldfields	2 1/4 2 1/2	1/9	5 0	-	0 5 0	408,635	California.....	11, Poultry, E.C.
Jay Hawk.....G	1/- 2/-	1/-	1 0	-7/8 Dec. '92	1 0 0	285,000	Montana.....	Dashwood House,
Kohinore "B"GS	-	-	1 0	-7/8 June '81	1 0 0	112,921	Colorado.....	Holford Ho., E.C.
La Plata.....S	2/3 2/9	2/3	0 5	1/3 Oct. '92	0 4 3	405,000	Colorado.....	11, Poultry, E.C.
La Tecla.....GS	4/- 5/6	4/-	1 0	-	0 19 0	76,915	Mexico.....	20, Bucklers-burg, E.C.
Maid of Erin.....S	3/6 5/6	3/-	1 0	4c. pab Sept '94	1 0 0	575,000	Colorado.....	23, Threadneedle-st.
Mess. d'l Oro (D)G	-7/3 -7/8	-7/3	1 0	-	1 0 0	400,000	Pinal Arizona.	257, Winchester Ho.
Mess. d'l Oro (D)G	-	-	5 0	-	5 0 0	10,000	Mexico.....	Dashwood Ho., E.C.
Montana.....GS	10/8 11/8	12/-	1 0	-7/8 Jan. '95	0 19 0	857,158	Mexico.....	Dashwood Ho., E.C.
New Colorado.....S	-	-	1 0	-	0 17 0	65,000	Montana.....	Gresham House, E.C.
N. ConsolidatedSC	-7/3 -7/8	-7/2	0 5	-	0 3 6	148,576	Colorado.....	Abchurch Cham. E.C.
N. Gold Hill.....G	8/9 11/3	10/-	1 0	1/- Oct. '92	0 19 9	191,045	N. Carolina.....	15, Angel-court, E.C.
N. New Guston.....S	3/- 7/6	3/-	1 0	-7/8 Dec. '85	1 0 0	110,000	Nevada.....	25A, Old Broad-st.
New Hoover HillG	1/6 1/8	1/6	1 0	-7/8 Mar. '90	1 0 0	418,888	Carolina.....	Langthorne Ho., E.C.
Palmarejo.....GS	5/- 6/-	5/8	1 0	-	1 0 0	100,000	Mexico.....	4, Conthall-building
Pinos Altos DINGS	-	-	1 0	1/6 Mar. '88	0 19 0	60,000	Mexico.....	119, Cannon-street.
Do 15% Cum Pref	-7/8 1/-	-7/8	1 0	-	1 0 0	77,147	Mexico.....	110, Cannon street.

Abbotts	G	1/4 3/4 pm	par	3/4 pm	1 0	—	0 10 0	100,000	Murchison	17, Old Broad st.
Achilles Gld Fld.	G	2/6 3/6	2/6	1 0	—	—	1 0 0	80,307	New Zealand	3, Church Pans, E.C.
Aladdin's Lamp	G	1 1/4	1	1 0	—	1/- Dec. '54	1 0 0	100,0 0	N. S. Wales	4-6, Throg. Avenue.
Amsa (Went.)	G	—	—	1 0	—	—	1 0 0	75,000	N. S. Wales	5, Throg. Avenue.
Anglo-Saxon	G	—	—	1 0	—	2/- July, '89	1 0 0	51,000	W. Australia	4, Lombard-court.
Australia	G	13/4 1/4	13/4	1 0	—	—	1 0 0	50,000	W. Australia	23, College-hill, E.C.
Australian	G	5/3 5/9	4/-	1 0	—	-/8 Mar., '92	1 0 0	210,000	Queensland	15, Old Jew's Chbrs.
Australian	C	—	—	20 0	—	1/6 July '94	7 7 6	18,315	No. Australia	Dashwood House.
Aus. Bro. Hill Con.	G	1/3 2/3	2/	1 0	—	1/- June, '91	1 0 0	537,138	N. S. Wales	Hillgrove, N.S. Wales
Baker's Creek	G	1 1/4	1	1 0	—	1/- Dec. '94	0 17 8	102,000	N. S. Wales	2, Met. Ex. Building
Bayley's Reward	G	13/- 14/-	13/4	1 0	—	-/4 Dec. '94	1 0 0	480,000	W. Australia	Blomfield Ho., E.C.
Big Blow	G	7/6 1	1/4	1 0	—	—	0 15 0	100,000	W. Australia	14, Sherborne In., E.C.
Blackett's Claim	G	10/- 12/6	11/3	1 0	—	—	0 15 0	60,000	W. Australia	6, St. St. Helena's
Blue Spur & G. G.	G	-/8 1/6	1/6	1 0	—	—	0 15 0	60,000	W. Australia	5, Gracechurch-st.
Bonnie Dundee	G	13/6 15/6	13/-	1 0	—	-/4 Jan. '95	2 0 0	250,000	Queensland	2, Gracechurch-st.
Brilliant	G	14/8 19/6	19/-	2 0	—	-/6 Jan. '95	0 6 3	72,000	Queensland	Charter Towers.
Brilliant Block	G	13/4 13/4	13/4	2 0	—	6d. Dec. '94	5 0 0	240,000	Queensland	Charter Towers.
Brilliant, St. Geo.	G	28/ 30/	28/-	0 10	—	1/- Jan. '95	0 8 0	960,000	N. S. Wales	Dashwood Ho., E.C.
Brit. Brock Hill	S	5/6 6/6	5/6	5 0	—	—	0 12 5	6,000	Queensland	14, Sherborne In., E.C.
Broken Hill Prop.	G	11/16 13/16	11/16	0 8	—	—	0 15 0	100,007	Queensland	9, Tokenhouse Yard.
Cashman Brll.	G	3/4 1/4	3/4	1 0	—	—	0 15 0	40,000	N. Australia	14, Hill-st., Edinboro
Carrington	G	2/9 3/2	2/9	12/6	—	—	0 12 8	80,000	Queensland	Winchester House.
Con. G. M. of W. A.	G	2/9 3/2	2/9	12/6	—	—	0 12 8	80,000	Queensland	50, 1, St. Swithin's-lane
Coalgirdle	G	13/6 17/6	13/6	0 8	—	-/3 June '94	0 4 8	100,000	Queensland	2, Gracechurch-st.
Croft's	G	3/4 4/	3/4	1 0	—	—	0 10 0	80,000	Queensland	Leadhall Bldg. E.C.
Crown Bayley	G	1/4 1/4 pm	1/4	1 0	—	—	0 10 0	80,000	Queensland	Blomfield House E.C.
Croydon King B.	G	3/4 5/-	3/4	0 5	—	—	0 10 0	80,000	Queensland	3-5, Gracechurch-st.
Cumbrind (New)	G	7/- 7/6	6/-	1 0	—	2/8 Dec. '87	1 0 0	184,690	Queensland	Winchester Ho., E.C.
Dawn & B. & W.	G	10 6 11/6	11/-	1 0	—	-/6 Mar. '93	1 0 0	498,400	Queensland	3-5, Gracechurch-st.
Daw Dawn P. C. G.	G	5/3 5/9	5/9	1 0	—	-/6 Apr. '92	1 0 0	490,000	Queensland	Winchester Ho., E.C.
Englehawk	G	2/9 3/2	2/9	1 0	—	—	0 19 6	120,000	Victoria	31, Lombard-street.
Empress Coalp. G.	G	3/4 3/4 dis.	3/4	1 0	—	—	0 10 0	90,000	W. Australia	2, Tokenhouse bldgs
Eng. & Aus. Coop. Cu	G	-/13/4	-/13/4	0 5	—	2 1/2 1883	0 15 0	138,000	So. Australia	136, Palmerston bldgs
Esbridge	G	-/13/4	-/13/4	0 5	—	—	0 10 0	354,790	Queensland	7, Queen-street-pl.
Frederick the Gr.	G	par. 3/4 pm.	par. 3/4 pm.	1 0	—	—	1 0 0	125,000	Victoria	St. George's-st.
Glenrock	G	2/- 2/6	2/3	1 0	—	—	1 0 0	225,000	N. Zealand	2-5, Queen-st. E.C.
Golconda	G	13/6 13/6	13/6	1 0	—	—	1 0 0	73,000	W. Australia	14, Sherborne In., E.C.
Great Boulder	G	3/4 3/4 dis.	3/4	1 0	—	—	0 10 0	55,620	W. Australia	2, Gracechurch-st.
Great Boulder	G	13/6 14/6	13/6	1 0	—	—	1 0 0	119,390	W. Australia	3, Gracechurch-st.
Golden Gate	G	2/- 2								

Anglo-Chilian P/N	8	8	10 0	4/5 Dec. '89	10 0 0	35,000	Antofagasta ...	123, Bishops-st. W.
Do. 6% Regt MB	99 101	99	100 0	6% Jan. '95	100 0 0	200,000	Antofagasta ...	123, Bishops-st. W.
Antio. (Pref.) G.S.	—	—	1 0	-/6 Mar. '90	1 0 0	22,883	Colombia	184, Gresham Ho.
Antioquia (ordiny)	—	—	1 0	—	1 0 0	42,453	Colombia	184, Gresham Ho.
Callao Bils. G	2/3 2/6	2/6	1 0	—	1 0 0	316,248	Venezuela ...	228, Winchester Ho.
Canarones	C	—	—	—	2 0 0	67,000	Chili	123, Bishopsgt. W.
Caralí	C	1/8 1/9	1/-	2/8	0 2 6	1,300,003	Venezuela ...	57, Margaret-st. E.
Cayloma	C	1/3 1/4	1/4	2 0	1/- Apr. '94	200,000	Peru	32, Leadenhall street
Chilón	C	-/6 1/4	-/6	1 0	—	125,000	Colombia	5, Copthall-bldg., E.O.
Colorado Nit. N	2/3 3	2/3	5 0	6% Nov. '94	5 0 0	32,000	Chili	10, King-st., Liverpool
Colombia Nit. N	—	—	—	10/16 Aug. '94	20 0 0	—	Venezuela ...	Ciudad, Bolívar.
Colombian Ry. G	12/6 13/8	12/6	1 0	1/- Sept. '94	1 0 0	75,000	Colombia	10, Blomfield-street,
Copiapó	C	1/3 1/3	1/3	2 0	1/- Dec. '94	100,000	Colombia	Dashwood House, E.O.
Darien "A"	C	2/3 2/6	2	1 0	—	40,553	Colombia	Manchester.
Don Pedro	C	5/6 6/6	6/-	1 0	0 17 6	133,102	Brazil	24-5, Devonha. Ch.B.O.
El Callao	G	7/8 12/6	5/-	5 0	9/4 Feb. '94	5 0 0	Venezuela ...	8, Bishopsgt.-st. Wn
Frontino & B. G	1/3 1/3	1/3	1 0	1/- Dec. '94	1 0 0	128,662	Colombia	184, Gresham House
Glenrock	G	2/- 2/6	2/3	1 0	—	199,948	Argen. & Ind	2-5, Queen-street, E.O.
Grauel	G	5/- 5/-	1 0	—	0 19 6	100,000	Colombia	10, Blomfield-street
Gundagai	G	3/8 5/8	3/8	1 0	—	180,000	Honduras ...	11A, Union-st. Old Brit.
Huanchaca	G	—	—	5 0	4/- Sept. '94	5 0 0	Bolivia	10, Avnu. d'Almeida, Paris
Javalí	G	-/6 1/6	-/6	0 2	8% '91	105,234	Nicaragua ...	139, Cannon-street.
Julia Taital	N	3/4 1	1 0	—	1 0 0	520,000	Chili	79/3, Gracechurch-st.
Lagunas	C	6% 6% 6%	5 0	15p.c. Dec. '94	5 0 0	120,000	Tarapaca ...	3, Gracechurch-st.
Lagunas Syndicate	C	22 22 1/2	19 1/2	5 0	7/6 Dec. '94	5 0 0	Tarapaca ...	3, Gracechurch-st.
Lautaro	C	8% 8% 8%	8 1/2	5 0	7/6 Dec. '94	5 0 0	Chili	70, Gracechurch st.
Liverpool	N	11 12	11	1 0	10 p.c. Dec. '94	82,000	Chili	3, Gracechurch st.
Loma	N	-/6 1/4	-/6	—	1 0 0	300,000	Colombia	8, Gracechurch-st.
London Nit. N	2 1/2 2 1/2	2 1/2	8 0	3/4% Nov. '89	8 0 0	16,000	Chili	9, Gracechurch-st.
London Nit. (Pref.)	C	4/3 4/3	4	0 2	8% Nov. '94	22,000	Chili	9, Gracechurch-st.
Maclea	C	—	—	1 0	—	200,000	Peru	11, Old Broad-st., E.O.
New Tarapaca	C	3/4 3/4	3/4	10 p.c. Dec. '94	1 0 0	130,000	Tarapaca ...	50, Lime-street, E.O.
Do. 2% Cum Pref	1 1/4 1 1/4	1 1/4	1 10	1 p.c. Dec. '94	1 10 0	130,000	Tarapaca ...	60, Lime-street, E.O.
Do. 8 p.c. Debs	86 92	89	100 0	6 p.c. Dec. '94	100 0 0	2260,000	Tarapaca ...	50, Lime-street, E.O.
Orita	G	1/6 2/6	2/-	1 0	1/- April '89	30,000	Colombia	10, Blomfield-street.
Ouro Preto	G	—	—	1 0	—	80,000	Brazil	6, Queen-street-place
Pao. & Jaspampa N	4/3 4/3	4/3	5 0	5/- Aug. '94	5 0 0	72,000	Tampaca ...	3, Gracechurch-st.
Primitiva	C	2 1/2 2 1/2	2 1/2	5 0	20% Oct. '89	40,000	Chili	Liverpool.
Quebrada	C	3/- 5/-	3/-	5 0	5% Mar. '92	200,000	Venezuela ...	38, Nicholas Lane.
Quebrada	C	40 50	40	8 p.c. 6% Feb. '94	100 0 0	2400,000	Venezuela ...	55, Nicholas Lane.
Quebrada	C	5% 6 40	5 1/2	10 0	6% Oct. '94	120,000	Chili	57 1/2, Old Broad-street
Rosario Y Dec. ...	C	105 107 104	10 1/2	6% Oct. '94	100 0 0	2475,000	Chili	57 1/2, Old Broad-street
St. John del Rey G	28/- 28/-	26/-	1 0	10% June '82	5 0 0	284,200	Brazil	28, Tower-chmbrs., E.O.
Rosario Y Dec. ...	C	2 1/2 2 1/2	2 1/2	5 0	—	32,000	Chili	12, King-st.,

Alamillos	L	10/-	15/-	10/-	3 0	-/6 Oct. '84	2 0 0	35,000	Spain	6, Queen-street-place
Avala	Q	0	0 ½	—	1 6	1/- May '83	1 0 0	160,047	Servia	4, Tokenho. Bldgs.
Consett Ore	—	5½	—	5½	3 0	5/- July '84	1 0 0	55,20	—	19, Grey-st. N'castle
English Cr. Spelter	—	—	—	¾	1 0	2½ Aug. '84	1 0 0	84,000	Lombardy	9, Queen-street-place
Fortuna	L	17/6	22/6	17/6	2 0	1/- Oct. '84	1 0 0	25,000	Spain	6, Queen-street-place
Isabola	C	3½	3½	—	5 0	3/6 Aug. '84	5 0 0	86,400	Italy	Dashwood Ho., E.O.
Isabola	C	3½	3½	—	5 0	1/6 Oct. '84	5 0 0	14,950	Spain	6, Queen-street-place
Mason & Berry	C	1¾	2	1¾	5 0	2/- May. '84	5 0 0	185,72	Canada	1, Cannon-street
Oscar	C	—	—	—	5 0	—	0 4 6	117,240	Norway	6A, Austin Friars.
Pastorana	C	5/	6/	5/6	3 0	—	3 0 0	67,619	Italy	6-7, Queen-street-pl.
Pontigband	SZ	—	—	—	10 0	11/6 Dec. '84	20 0 0	14,000	Coueron, Fr...	6-7, Queen-street-pl.
Rio Tinto	C	14½	14½	14½	10 0	6/- Oct. '84	10 0 0	325,000	Spain	30, St. Swithin's-lane
Do. (Mort. Bonds)	—	14	10½	10½	10 0	6½ Jan., '85	10 0 0	219,740	Spain	30, St. Swithin's-lane
Do. (2nd do.)	—	102	104	102	100 0	5 p. Jan., '85	100 0 0	212,94,860	Spain	30, St. Swithin's-lane
Do. (3rd do.)	—	100	102	100	100 0	5 p. Jan., '85	100 0 0	232,7,680	Spain	30, St. Swithin's-lane
Hijanz	Q	7/-	9/-	7/-	1 0	—	0 19 0	95,000	Servia	170, Bishopsgt.-st. Wn
Tharisa	C	4½	4½	4½	2 0	12½ Mar. '84	2 0 0	625,000	Spain	Glasgow.
West Prus. Pref.	—	—	—	—	10 0	8½ Jan., '86	10 0 0	385	Germany	Walbrook Ho., E.O.
West Prussian Ore	—	—	—	—	10 0	8½ Jan., '86	10 0 0	5,400	Germany	Walbrook Ho., E.O.
West Prussian Ore	—	—	—	—	10 0	8½ Jan., '86	10 0 0	14,050	Germany	Walbrook Ho., E.O.
Wohlfahrt	L	—	—	—	1 0	3½ Dec. '84	1 0 0	99,634	Prussia	17, Victoria-st. S.W.
Wohlfahrt	—	—	—	—	1 0	3½ Dec. '84	0 10 0	3,090	Prussia	17, Victoria-st. S.W.

"THE MINING JOURNAL" SHARE LIST—(Continued).

SOUTH AND CENTRAL AMERICAN MINES—(Continued).

AFRICAN MINES—(Continued).

Name.	Closing Price, Jan. 18, 1895.	Closing Price, Jan. 11, 1895.	Par.	Latest Dividend.	Called up Per Share.	Amount of Stock or No. of Shares Issued.	Situation of Mine.	Head Office.
Hanta Barona...G	3 1/4	3 1/4	—	1/3 Dec. '88	0 10	80,000	Brazil.....	Liverpool
Hanta Elena...N	3 1/4	3 1/4	—	5/- Oct. '94	0 10	22,000	Tarapaca.....	3, Gracechurch-st.
Santa Rita...N	2 3/4	2 3/4	—	15/- Apr. '94	0 10	22,000	Chili.....	5, Gracechurch-st.
Santa Rita...N	2 3/4	2 3/4	—	5/- Dec. '94	0 10	22,000	Chili.....	5, Gracechurch-st.
Santa Rita...N	2 3/4	2 3/4	—	5/- Dec. '94	0 10	22,000	Chili.....	5, Gracechurch-st.
Santa Rita...N	2 3/4	2 3/4	—	5/- Dec. '94	0 10	22,000	Chili.....	5, Gracechurch-st.
Santa Rita...N	2 3/4	2 3/4	—	5/- Dec. '94	0 10	22,000	Chili.....	5, Gracechurch-st.
Santa Rita...N	2 3/4	2 3/4	—	5/- Dec. '94	0 10	22,000	Chili.....	5, Gracechurch-st.
Santa Rita...N	2 3/4	2 3/4	—	5/- Dec. '94	0 10	22,000	Chili.....	5, Gracechurch-st.
Santa Rita...N	2 3/4	2 3/4	—	5/- Dec. '94	0 10	22,000	Chili.....	5, Gracechurch-st.
Santa Rita...N	2 3/4	2 3/4	—	5/- Dec. '94	0 10	22,000	Chili.....	5, Gracechurch-st.

AFRICAN MINES.

African Gold Con.	11/- 12/-	11/- 12/-	—	—	0 8	300,000	Transvaal.....	16, Tokenhouse-lane
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Name.	Closing Price, Jan. 18, 1895.	Closing Price, Jan. 11, 1895.	Par.	Latest Dividend.	Called up Per Share.	Amount of Stock or No. of Shares Issued.	Situation of Mine.	Head Office.
Labon-Barlyn...G	5/3 5/9	4/3	—	—	0 2 6	889,233	Lydenburg...	110, Cannon-street.
Labon-Barlyn...G	5/3 5/9	4/3	—	—	0 2 6	889,233	Lydenburg...	110, Cannon-street.
Labon-Barlyn...G	5/3 5/9	4/3	—	—	0 2 6	889,233	Lydenburg...	110, Cannon-street.
Labon-Barlyn...G	5/3 5/9	4/3	—	—	0 2 6	889,233	Lydenburg...	110, Cannon-street.
Labon-Barlyn...G	5/3 5/9	4/3	—	—	0 2 6	889,233	Lydenburg...	110, Cannon-street.
Labon-Barlyn...G	5/3 5/9	4/3	—	—	0 2 6	889,233	Lydenburg...	110, Cannon-street.
Labon-Barlyn...G	5/3 5/9	4/3	—	—	0 2 6	889,233	Lydenburg...	110, Cannon-street.
Labon-Barlyn...G	5/3 5/9	4/3	—	—	0 2 6	889,233	Lydenburg...	110, Cannon-street.
Labon-Barlyn...G	5/3 5/9	4/3	—	—	0 2 6	889,233	Lydenburg...	110, Cannon-street.
Labon-Barlyn...G	5/3 5/9	4/3	—	—	0 2 6	889,233	Lydenburg...	110, Cannon-street.

THE MINERAL WEALTH OF SIBERIA:
ITS GOLD PRODUCTION.

THE Great Siberian Railway enters upon the borders of Siberia after having traversed the southern portion of the Urals, that metallurgical treasure-house of Russia. The numerous iron and copper works, the gold diggings and coal fields situated along the eastern side of the Urals are, speaking strictly in a geographical sense, already within the limits of Asia, although in an administrative sense they are included in the governments of European Russia. Without touching upon the details of the mining and metallurgical industries of the Urals, it is, however, impossible not to mention them in an article devoted to Siberia, all the more as the construction of the Great Siberian Railway is of very great importance to the works of the Urals as a means of extending their market. During the last five years the works, mines, and gold diggings of the Urals have yielded as in the following table:—

	1887.	1888.	1889.	1890.	1891.
Gold.....	649 1/2	685 1/2	641 1/2	642 1/2	705
Platinum.....	209	186	161	173 1/2	259 1/2
Copper.....	163,045	158,727	157,948	173,307	174,403
Pig iron.....	23,425,848	24,039,238	24,725,521	27,703,479	29,523,510
Iron.....	13,302,405	14,160,047	14,889,720	16,716,722	18,448,918
Steel.....	2,228,231	2,401,194	2,582,83	2,716,128	2,846,918
Manganese ore.....	50,000	82,700	179,103	143,500	147,598
Coal.....	9,972,089	12,712,123	16,402,23	15,222,649	14,917,316
Salt.....	14,113,100	17,655,800	16,210,050	19,214,590	20,415,487
Sulphur pyrites.....	—	676,582	896,076	358,785	481,500
Chrome iron ore.....	—	440,868	853,732	144,867	189,047

The value of the chief products of the mining and metallurgical industries is estimated at from 20 to 25 million metallic roubles.

The southern portion of Siberia contains considerable deposits of every kind of mineral, and a mining industry has existed in its different regions for about two centuries. But great mineral wealth still lies untouched in the bowels of Siberia, and its exploitation will become possible when the existing economical conditions will be modified by the construction of the Great Siberian Railway.

The chief mineral riches of Siberia include, among metals, gold, silver, copper, and iron. There are also deposits of mercury and tin ores. Among the carboniferous and combustible substances there are coal and lignite, graphite, sulphur, and

naphtha; and among salts, common and glauber salts; besides which, Siberia is rich in all kinds of rare stones.

Gold.

At the time when the gold industry of the Urals was extending more, and penetrating to their utmost northern limits, the existence of gold was not known in Siberia, and it was only in 1831 that it was found by private individuals in the mountains between the Rivers Toma and Yenisei in the system of the River Kiya. And for a certain period all the endeavours of the gold workers were concentrated in this district. In 1836 they transferred their prospecting further to the east in the spurs of the Sayansk mountain chain, to the borders of the Governments of Yenisei and Irkutsk. There rich deposits of gold were found in the wildest and most inaccessible places along the River Birusa. But the activity of the gold miners, whose number was constantly increasing, did not long restrict itself to the gold-bearing system of the Birusa. It was enough for one daring gold miner to push towards the north, to the rivers Toungoussk, to be followed by many others, and in 1840 and 1841 a large number of rich and very durable gold deposits were discovered between the Verkhnya and Podkamennaya Toungousski, which presented a vast store of gold exceeding all those known at that time. The prospecting was pushed further and further to the east, and in 1849 the gold deposits of the Olekminsk system in the Government of Yakutsk were put under exploitation. In 1854 the gold industry was established in the Bargouzinsk region of the Transbaikalian province. In the Nerchinsk mining region the exploitation of gold has been carried on by the State since 1832, and private individuals were first permitted to prospect for gold in 1864, and in 1865 the exploitation of gold by private individuals was started. In the littoral province prospecting for gold was permitted in 1866, and in 1868 it was begun in the Amour province. And, lastly, the discovery of gold deposits in the tributaries of the river Bouraya, which fall into the Amour from the left side, was only made in 1875.

At the present time the Siberian gold industry extends over a vast area, and gold is exploited in the basins of the Obi, Yenisei (with the Baikal), Lena, and Amour, within the limits of all the governments and provinces of Siberia. The gold-bearing localities along the Obi, Yenisei, and Lena are situated in the basins of rivers flowing from the east, that is, along the western declivity of the mountain chains which descend into the northern Siberian lowlands from the mountains which border the Arctic Ocean on the south. There are rare exceptions; the gold deposits in different parts of Siberia lie at different altitudes above the level of the sea, but, as a rule, they do not rise above 2000 feet, the height of the mountain chains being twice and three times greater. In the Kousnets Alatau the height of the mountains is from 5000 to 6000 feet, and the gold deposits become smaller and poorer as the mountain chain rises towards the south.

The geognostic character of the gold deposits of Siberia also varies in different localities. The gold-bearing rock of the Kousnets Alatau is greenstone; on the eastern declivity of this mountain ridge the extreme slopes, down to the openings of the valleys, are composed of clay slates, which higher up the current changes into metamorphic and calcareous clay slates, which change into jaspers and hornblendes near their contact with the granites and diorites.

The predominating rocks of both the northern and southern parts of the Yenisei region are made up of various kinds of metamorphic slates among which clay slate predominates, and in some instances passes into mica schist. The northern system also presents granites, gneisses, diorites, and porphyries, which appear more rarely in the southern system. In the northern system, limestones, sandstones, and conglomerates are also found in places. The gold-bearing strata lie in various kinds of slates, near their contact with granites and diorites; and wherever this combination occurs gold is sure to be found. The predominating rocks in the southern regions of the Government of Yenisei, in the spurs of the Sayansk mountains, are granites, cyanite, limestone, and metamorphic slates.

In the Province of Yakutsk the chief rock of the gold-bearing systems of the rivers Olekma and Vitima is a granitic cyanite, which changes in places into a more laminated structure, passing into gneiss, which imperceptibly passes into micaceous, chloritic, talc and clay schists. All these rocks are distinguished for their being gold-bearing, especially the clay schists. The general character of the rocks of the valleys of the Nerchinsk region is the same, consisting as they do of granite, gneiss, cyanite, greenstone, diorite, and dioritic cyanite, and felspar porphyries. The geological structure of the gold-bearing region of the Amour province, along the river Zila, is composed of micaceous and hornblende gneisses and slates. The characteristic feature of the presence of gold is the passage of the one class of rock into the other.

The composition of the gold deposits themselves depends upon the rocks surrounding them. The thickness of the deposits varies greatly, from 2 feet to 3 sagens and more; but generally it varies between 2 and 7 feet. The upper strata of the deposits contain bones of mammoths, rhinoceros, and other extinct and existing animals. All the deposits are covered by a layer of earth, known as peat. The length of the deposits varies from 1 to 50 versts and more, sometimes with a layer of gold-bearing and extending along their entire length of sufficient thickness for profitable working. As a rule, the richness of the gold-bearing strata varies in each deposit; the upper portion generally contains a small accumulation of coarse particles of gold mixed with quartz, magnetic iron and pyrites; in the middle portion the gold is finer in its particles and the sand poorer in gold, and, lastly, in the tail of the deposit there remains a floating gold-dust which only gives traces of gold.

The soil of nearly all the northern portion of Eastern Siberia is perpetually frozen. The frozen state of the soil and the dense

forests which subsequently covered the deposits have favoured the preservation of the gold in them from the wearing and denuding action of the water. Many of the Eastern Siberian gold deposits show undoubted traces of the influence of glaciers. Thanks to the cold climate which, following the Glacial period, many of the gold deposits have been preserved to the present day in their original form, so that they present an instructive example and traces of a geological period partially contemporary with man, who has even left indubitable traces of his presence in the form of arrow-heads made of jasper and quartz, hammer heads, ornaments, coins, bones, &c.

Although Eastern Siberia employs only three times as many men as Western Siberia, yet its production is nine or ten times as great. This is due to the greater richness of the deposits worked in the former region. Owing to the dearth of provisions and forage, and consequently of labour and horses in Eastern Siberia, the exploitation of the poorer deposits is impossible with the methods now in use for treating the gold-bearing sand.

When in 1829 the Siberian gold industry was made free to private individuals, a great number of enterprising men of large capital found their way to this remote region. The gold miners became rich themselves, and aided the development of the region with a generous hand, laying down roads to inaccessible places, establishing a steam navigation along the abundant Siberian rivers, and sacrificing considerable sums to the erection of national institutions, such as schools, churches, and every kind of charitable and pious work. The development of the gold industry reflected itself upon the towns of Tomsk, Krasnoyarsk, Irkutsk, Chita, Nerchinsk, and Blagoveschensk.

Beyond the 40,000 miners employed at the mines themselves, the Siberian gold industry gives occupation to a considerable population in the transport of goods to the mines and other auxiliary works. Indeed, it indirectly aids the development of agriculture in the neighbouring agricultural districts, and it presents a profitable market for their produce.

The extent of the sums acquired by the country from the gold industry is seen from the following example:—During the three years, 1887 to 1889, the wages of the men employed in the gold mines of the Olekminsk and Vitinsk systems amounted to 6,789,000 roubles, while the cost of the chief objects of consumption at those mines was 12,268,000 roubles. These figures give an excellent idea of how vast an amount of money the gold industry distributes over the entire region, and how it supports its population, trade, and industry.

Passing from these general data respecting the Siberian gold industry, its individual features, according to the systems of the chief Siberian rivers, may be considered.

In the vast basin of the Obi the gold industry has been established:—1. On the steppe land extremity of Siberia, in the Provinces of Akmolinsk and Semipalatinsk, along the rivers belonging to the system of the left branch of the Obi-Irtys system of the River Irtys. 2. On the western side of the Kouznets Alatau in the Mariinsk region of the Government of Tomsk. 3. In the Altai mining region. 4. On the eastern side of the Kouznets Alatau in the Achinsk region of the Government of Yenisei.

Owing to the difference of the natural conditions in the different gold-bearing regions, the modes and processes of extraction also differ. In the steppe region the mining is exclusively open workings, so that the deposits with deep lying strata are not worked owing to the great expense of the timber required for supporting underground workings. Thanks to the warm climate, the washing of the sand is carried on from April to October—that is, during about seven months. The workings are surrounded by a nomad Kirghiz and Cossack population, who work in the mines partly for so much per cubic sagene of earth, and partly at so much per zolotnik of gold extracted, and besides this, they serve as the providers of provisions to the mines. Hence the gold discovery in the steppe region is not hampered by great preliminary expenses. Moreover, the wages and living of the miners is far less in the steppe than in the forest region and, therefore, it is possible to exploit comparatively very poor deposits, in which the amount of gold does not in some cases exceed 8 doleys per 100 pounds of sand, or '00002 per cent.

In the forest region which embraces the Altai mining region, the Mariinsk region of the Government of Tomsk, and the Achinsk region of the Government of Yenisei, the climate is more severe, and the washing of gold can only be carried on during five, or at most six, months. The population is more sparse, and the conditions of the industry begin to acquire another aspect, more like that which predominated in general in Eastern Siberia. In the Achinsk region the gold industry is concentrated at the sources of the Chulyma, along the rivers Belaya, Chernaya, and Sarala-Use. In the Altai mining region the gold mines are exploited both by His Imperial Majesty's Cabinet and by private individuals.

The gold industry is very feebly developed in the Akmolinsk and Semipalatinsk provinces. In the Mariinsk region the production of gold is subject to very slight fluctuations, notwithstanding the increased number of deposits under exploitation, and the larger amount of gold-bearing sand treated in them. This shows that the richer deposits have been exhausted, and that the exploitation of the poorer can be carried on profitably owing to the low price of labour and provisions at the gold mines of this region. The amount of gold obtained in the Altai region is constantly increasing, owing to the gold-bearing sands being of very uniform richness, while the number of deposits worked is on the increase. This also proves that the stores of gold in the deposits of the Altai region are not yet exhausted. Gold quartz is worked at two mines in the Altai, but the amount produced is still inconsiderable. During the last ten years the production of the Achinsk region has varied very slightly. Of all the gold deposits in the Obi system, those in the Mariinsk, Altai, and Achinsk regions are the most profitable for exploitation, owing to their proximity to the railway; and there is reason for thinking that the extraction of gold will be further developed in these districts.

The great river province of the Yenisei comprises four gold-bearing regions, the Minousinsk, Krasnoyarsk, Yeniseisk (which sub-divides itself into two parts or systems, the northern and southern), and Nizhneoudinsk.

The Minousinsk region, where gold was first prospected for in 1832, enjoys a comparatively moderate climate, an abundance of pasture and corn, and yet the gold industry of this region develops very slowly. This is chiefly owing to the distance, 300 to 350 versts, of the deposits from the centres of population. The amount of gold produced in the Minousinsk district remains nearly stationary.

In the Krasnoyarsk region, where the exploitation of gold was started in 1847, only three deposits are worked at the present day. The amount of gold washed in 1884 was nearly 6 pounds, while in the remaining years it varied between 1 and 4 pounds.

In the Yeniseisk region the most important gold-producing localities are the valleys of the Rivers Sevaglikone, Ogne, Kalam, and Enashimo, belonging to the system of the Podkamennaya Toungouski, and also of the Aktolika and Bangash belonging to the basin of the Pita, all in the northern system; the basin of the River Onderei, which falls into the tributary of the Angara, the Kameuka, and the basins of the rivers Bolshaya, Mour-oghnyaya, and Pita, all in the southern system. In the majority

of instances the rivers of both systems have a rapid current, owing to the sharpness of their fall. During the heavy spring rains, they rapidly become swollen and overflow their courses, and although, owing to the steepness of their beds, they do not overflow to any great extent, nevertheless, they frequently cause great damage to the gold workings. On the other hand, during the prolonged summer droughts, some of them become so shallow that it is necessary to stop washing the sands.

The rivers in the Yenisei regions are not navigable, with the exception of the lower portions of the Yenisei, Podkamennaya Toungouski, and Bolshaya Pita. The more considerable tributaries of these rivers are only navigable to small boats and rafts.

The gold extracted in the Yeniseisk region is generally finely granular, tabular, and, as it were, rubbed; a coarsely-grained gold of high purity is found along the Rivers Ogne and Enashimo.

In the northern system the thickness of the gold-bearing deposits varies from 2 to 8 feet, although there are some which are as much as 15, 20, and even 35 feet thick. In the southern system the thickness of the deposits generally varies between 2 and 12 feet. The superficial covering of peat is in both cases between 5 and 30 feet. The average richness of the gold-bearing sand in the northern system is about 31 dolias of gold per hundred pounds, but in the southern system it is somewhat less. However, in both systems there are workings in which the quantity of gold reaches one zolotnik per pound.

In the Yeniseisk region the first deposits were discovered in the present southern system, along the rivers Onderei and Mamona, in the year 1838. At that time the workings of the Berusinsk system, in the Nizhneoudinsk region of the Government of Irkutsk, were of great importance owing to the abundance of gold they yielded. As, however, the newly-discovered deposits in the Yeniseisk region were found to excel those of the Berusinsk system in richness, numerous prospecting expeditions were dispatched to this region, and in 1839 the deposits of the northern system were discovered in the valleys of the Rivers Aktolik and Vangash, while in the beginning of the forties all the present gold districts were covered with claims, although their exploration is being carried on to the present day. In the Yeniseisk region, as everywhere, the richest deposits were discovered first, and, therefore, the yield of gold from this region attained its maximum soon after its discovery, and then began to gradually decline. By the amount of gold produced, the Yeniseisk deposits stand among the richest in Russia. In the first year, after the gold washing was begun, and when only one mine was under exploitation, with 190 miners, the yield exceeded 7½ pounds of gold. Subsequently the number of mines and the yield of gold increased year by year; the maximum yield coincides with the year 1847, when 1212 lbs. (12½ pounds) of gold were produced by 12,100 miners. This amount formed about 65 per cent. of the production in Russia during that year. After 1847 the amount of gold extracted began to lessen, notwithstanding the increased number of miners, which in 1854 amounted to 20,567, and also the increased number of mines and the quantity of sand washed therein. The exploitation of the gold no longer formed an attraction for large companies and gradually began to fall into the hands of small enterprises.

In 1882 the exploitation of veinous gold was started in the Yeniseisk region, but it develops very slowly, and as yet the production has never exceeded 8 pounds, and in recent years has even been under 1½ pound.

The gold workings of the Nizhneoudinsk region of the Government of Irkutsk and of the Kansk region of the Government of Yeniseisk are situated along the system of the River Birusa. Only the upper courses of this river pass through the Nizhneoudinsk region, after which it flows through the Kansk region of the Government of Yeniseisk. At the present time these regions occupy almost the last place among the Siberian gold-producing regions, although formerly the Berusinsk system was among the richest in Eastern Siberia.

The first discovery of gold in the Berusinsk system was made in 1836. The richness of the deposits of this system attracted numerous prospecting parties, and already in 1839 the Kansk and Nizhneoudinsk regions yielded about 41½ pounds of gold out of a total of 48½ pounds extracted in Eastern Siberia. The maximum yield of gold from these regions was in 1842, when it equalled 204 pounds 6 lbs., or about 20 per cent. of the total production in Russia. Since then the production of gold in these regions has gradually decreased, and in some years has even fallen below 15 pounds. However, this decrease should not be ascribed to the exhaustion of the mines but chiefly to the discoveries of gold in other systems, and there is reason for thinking that if more detailed explorations were made, and the exploitation of the deposits more scientifically carried out, then the Berusinsk system would once more stand to the fore.

REPORTS FROM THE MINES.

BRITISH MINES.

DEVON GREAT CONSOLS.—Wm. Clemo, January 16: Since the date of last week's report we have had a severe snowstorm, which has caused some hindrance to our workings throughout the mines, and to the shipping of arsenic at Morwellham, and the forking of the water at Watson's has been slow owing to the partial blocking of the larger wheels at Blanchdown. The stopes are looking well, and the weather having become more favourable, we hope our surface operations will now go on without further loss of time.

DRAKEWALLS.—Moses Bawden, January 16: The shareholders will be pleased to know that the engine shaft has been sunk to the 190, the crosscut driven south 14 fathoms and cut into the lode 3 fathoms; and we are now driving west on it, so as to get through the crosscourse, which should be only a few feet to west of the crosscut, and as the crosscourse usually shifts the lode to the right hand, we expect, on cutting through it in a few days from this time, to get into the south or ore-bearing part, and the indications that we shall get a very profitable lode are good, as we have rich stones of arsenical mndie, copper ore, and tin. Our stopes are maintaining their productive character, and in spite of the very unfavourable winter we are having our returns monthly are within a small amount of meeting our costs, and as the spring advances we shall undoubtedly do better.

LEADHILLS.—W. H. Paull, January 14: Brown's vein. In the 160 fathom level driving north of Jeffrey's shaft the vein is 4 feet wide, composed chiefly of stone, intermixed with spar, spotted with ore, and a little water issuing from forebreast. The 160 fathom level south of Wilson's shaft is communicated with winze sunk from 145, which has thoroughly ventilated this section. Vein in forebreast 4 feet wide, strongly mixed with spar, but without ore. In stope over this level south of Jeffrey's shaft the vein is now worth 20 cwt. of lead ore per fathom. No. 2 stope over the 145 fathom level north of Jeffrey's shaft will produce 35 cwt. of ore per fathom. Nos. 3 and 4 stopes over same level north of ditto are worth on an average 28 cwt. of ore per fathom. The vein in drift going south over the 130 fathom level is 6 feet wide, composed of spar, stone, and lead ore, now producing 20 cwt. per fathom. In the 115 fathom level driving north of Jeffrey's shaft the vein is 4 feet wide, of a kindly appearance, and there are indications for an improvement. No. 2 stope over this level is on vein 4½ feet wide, yielding 30 cwt. of ore per fathom. The 100 fathom level south of Wilson's shaft is going forward at a fair rate on vein 4 feet wide, containing a good mixture of spar, and letting out a little water

—a favourable indication. In the crosscut going eastwards towards Raik vein at the 100 fathom level we have recently passed through a small branch of quartz, showing spots of lead ore, and the ground has become a little harder. The vein in the 85 fathom level south of Wilson's shaft continues unproductive. The stope over this level south of Wilson's shaft will yield 50 cwt. of ore per fathom. In drift over the 70 fathom level south of Wilson's shaft the vein is worth 40 cwt. of ore per fathom. The vein in stope over the 50 south of flat-rod shaft will produce 30 cwt. of ore per fathom. In stope over the 35 south of same shaft the vein yields 25 cwt. of ore per fathom. The stope below the 35 south of ditto, on vein 4 feet wide, is yielding 25 cwt. of ore per fathom. At Gripp's adit going south Sarrowcole vein continues of a strong and promising character, with good indications, letting out a heavy feeder of water, and at times producing stones of lead ore. Another severe snowstorm took place on Saturday, continuing throughout yesterday and last night, but it is milder to-day. Surface operations are being dealt with as far as practicable, though much impeded by the severe weather and snow drifting, &c.

WHEAL FRIENDLY.—St. Agnes, January 14: We have six men driving the intermediate east, at £8 per fathom. During the past month we have met with a crossing of spar which disordered the lode for the time, but I am pleased to say that the lode is again improving and is producing good stones.

WEARDALE LEAD.—Report on Wardale Company's mines for the week ending January 12:—Groverake. Opening Armstrong's rise from 30 fathom level, we are now up to the rise, and the men are cutting over to the north. In crosscutting south from Adamson's drift to hole to above rise we have cut the vein lead, which is rather sparry and not without ore. Firestone drift east, sparry vein, but poor in ore, worth 10 cwt. per fathom. Groverake cubic fathom stope worth 12, 10, 10, 12, 14, 12, and 18 cwt. per fathom. Groverake tribute ore returned for the week at 25 bings.—Boltsburn. Crosscutting south from old rise above Watts' level searching for flats, we have gone through some broken ground, but it is now looking firmer and shows a little ore spar and some ore, but not to value. North flat, Watt's level east, worth 40 cwt. per fathom. Workings in south flats worth 30, 45, 36, 30, 28, 50, 16, and 20 cwt. per fathom.—Greenlaws. Nattass Gill drift, stopes worth 20 and 16 cwt. per fathom.—Watson's drift. Vein 4 feet wide of spar, hard rider and other vein stuff with some ore, but none to value.—Lowe's drift. Slaty hazel drift west from rise, vein 3 feet wide, looking better for ore, worth 16 cwt. per fathom. East from rise, vein 2½ feet wide, rather improved for ore, worth 12 cwt. per fathom. The crosscut in scar limestone from R. Lowe's rise is still composed of very strong flats and cavities, but no ore of any importance. Lee's sump sinking, vein 3 feet wide, worth 20 cwt. per fathom, stope worth 32 cwt. per fathom.—Greenlaws. Tribute ore for the week returned at 14 bings.—Sedling. Driving 64 level east, vein looks fairly well, worth 16 cwt. per fathom. 64 level west, strong vein in plate, composed of floorspar, rider, and a little ore. East stope above 64 level worth 14 and 14 cwt. per fathom. Opening 56 level, have done 2 fathoms east from old shaft; kindly vein about 1 foot wide, of spar moderately mixed with ore. Ore raised for the week, 60 tons. No ore dressed, and only 26 tons of lead smelted. All surface work is stopped by the snow and frost.

COLONIAL, INDIAN, AND FOREIGN MINES.

LADY LOCH.—The manager under date, Coolgardie, December 8, writes as follows:—The south reef has been fairly well prospected. One shaft on the hanging wall side of the reef has been sunk 20 feet, and a drive been put in south to cut the reef. After driving 6 feet the reef was cut, showing 4 feet of quartz mixed up with a mollock formation. About 12 feet from this shaft another shaft was started and sunk 14 feet showing the reef to be about 6 feet wide carrying good gold. When I took charge I made this shaft the main one, and continued sinking, carrying the reef all the way. Another shaft was sunk 17 feet further south of the main shaft to a depth of 50 feet in soft country, and a drive was put in 28 feet north, thus passing through the main reef. The reef at this point was showing good gold freely. The main shaft passed through this drive, proving the reef all the way. The shaft is now sunk to a depth of 90 feet, with good prospects. From the 80 feet downwards fair gold was showing in the solid stone, and cross in the bottom of the shaft; the reef is 4 feet 6 inches wide, and showing gold all through the stone. We are very close to water, and with another 10 feet of sinking water would be struck, and as the reef is so large a good supply is certain. At the present time water is a very great item, as I could sell as much water as could be pulled at the rate of 7s. per 100 gallons.

SHEBA.—The following report has been received from the general manager for the month of November: Mine, No. 3 level. In prospecting the old under-hand stope from No. 3 to No. 5 level a little good ore was discovered, which carries considerable visible gold.—No. 4 level. We have again opened the old west stope where we have discovered a small seam of good ore.—No. 5 level. The west end extended 41 feet. No. 9 crosscut was driven 9 feet. No. 10 crosscut was driven 27 feet.—No. 6 level. We have discontinued stope on this level and are sinking the No. 7 level continuation of 17 winze.—No. 7 level extended 27 feet west.—No. 8 level. In underhand stope on this level we have extracted some very good ore, showing visible gold freely.—No. 9 level. We are here cutting out a plat at the foot of No. 30 winze.—Lower level tunnel. This has been extended 24 feet west in slate, making a total of 1316 feet. At 1230 feet we crosscut towards the reef 118 feet during the month. At 113 feet in the north of this tunnel we cut a quartz stringer 2 feet wide, and on the north side of that we cut the conglomerate. Both the stringer and the conglomerate show considerable iron pyrites, but no gold. Two rock drills are now working in the end of the tunnel, and two others in the crosscut.—Annie's Fortune Block tunnel. This drive has been extended 28 feet; the ground shows signs of improving.—Incline shaft. This was sunk 10 feet 6 inches during the month. This shaft has been discontinued as we are now breaking rock from the quarry for the mill which interferes with sinking. A slight improvement was noticed in the bottom of the shaft when we quit sinking.—Quarry. We are preparing to again work this quarry, as recent prospecting has shown us some fairly good ore, and then, being such a large body of ore, it will be cheaply stoned.—Edwin Bray Block. The shaft to connect with Low Level tunnel sunk 22 feet during the month. The crosscut north into Annie's Fortune Block was not continued during the month, as the contractor was short of labour.—Oriental Block, Good Hope shaft. The skiproad has been completed in this shaft. The pump filled ready for sinking. A contract for sinking to the Low Level Tunnel has been let. The hoisting engine has been placed in position, and we are now ready to start pumping to clear the shaft of water preparatory to sinking.—Rowe's winze. We have forked the water from this winze, preparatory to sinking it another lift, so as to prospect the ground in this part of the property.—Surface operations. The hoisting engine and self-tipping skips at the Good Hope winze are nearly ready for starting up. The two locomotive boilers erected at the mine have been providing steam for the last month to the large air compressor, which enables us to run four instead of two drills, as was the case when only using one boiler. A cutting for a tram road has been made round the side hill from Phillip's shaft to the Good Hope shaft. Rails will now be laid to connect with the incline up to Phillip's shaft, so that we can haul fuel from where it is delivered by ox-wagon to the Good Hope shaft. New work, trench for cable. This is being extended as fast as a large gang of workmen can do it; the ground below the surface has nearly all to be blasted. So far, the trench is ahead of the cable layers, who are, however, following up closely.—Generating station. Work on the foundations and retaining walls is progressing favourably.—Turbine pits. The masonry work to carry the three turbines and forming the mill race is completed. The building for generator house is framed ready for erection. The new mill building is going up readily; the framework of tanner building and part of that of the battery has been erected, also part of the battery timbers. The mortar blocks are now being placed. All work in connection with the new mill is being pushed on as fast as we can with the amount of labour we have at our disposal.

APPANTOO GOLD.—Herewith I beg to send you monthly report for November: Cawston shaft. Have timbered the crosscut (104 feet from surface) from shaft to reef, and have cut into reef 6 feet, but have not reached footwall yet. Am stacking the ore on surface until the tramway is completed to take it to the old mill. This tramway will be continued on to the new mill site.—Adit shaft. Have timbered this shaft from No. 1 level (50 feet) to adit, and commenced to take out ground overhead for the engine and headgear.—Thompson's tunnel. This is now in a distance of 200 feet. Size of reef 9 feet.—Esson's east. Timbering finished here, and stoping commenced. Size of reef 7 feet.—Esson's west. Nothing done here during month.—Swift's adit. We are now in a distance of 92 feet east with a good body of ore in face 13 feet wide.—George's adit. This is now in a distance of 56 feet going east, and west 60 feet, with 12 feet of stone in both faces.—Worgent's tunnel. We are now in here a distance of 167 feet which is well timbered and leading stope within 25 feet of the face. Size of reef 7 feet.—Remarks. Have not worked in all the places now opened up in your mine, as the ore is not needed until we have more crushing power. Average size of reef throughout 9 feet.—Thomas Worgent.

AUSTRALIAN BROKEN HILL CONSOLS.—The mining manager reports by mail for the fortnight ended December 6: Block 96. 280 level east prospecting drive, No. 4 rise stope, driven 38 feet. Stopping continuing, but without obtaining any rich ore. The lode in the northern and north-eastern stopes is widening and rising very fast; in the eastern stope the lode is about 2 feet wide and containing small veins of iron. North-west drive driven 11½ feet, total 32 feet 6 inches. No change.—Incline 2½ level west. Stopes driven 16 feet. No change. Galena and a trace of iodide of silver has been met with in a vein of iron. No. 1 rise off No. 4 level east off incline stope driven 15 feet. Stopping east and west at point mentioned in last report. The lode is small, consisting of carbonate of iron which carries galena and a little fahlerz.—Note: The quantity of rock mined during the fortnight was 2686½ cubic feet.

BAYLEY'S REWARD CLAIM.—Summary of ore and gold return for fortnight ending 10th November:—Estimated amount of stone at grass, 4225 tons; stone raised, 50 tons; stone treated, 225; gold won, 1400 ounces.—Mining report, dated November 24: Sylvester shaft since last report has been sunk 7 feet, total being 307 feet. Ground up to the present is favourable for sinking.—North drive, 280. The north drive at the 280 level is driven 14 feet, full length 51 feet from shaft. We are still following the fault, which is running slightly east by north east. There is no change beyond a slight drip of water showing in the face.—160 level level. Are at present making preparations for sinking winze, or continuing Gordon shaft to the 220 level. This will partly test the lode and ventilate the workings.—Gordon shaft. Work in the stopes in the bottom of the No. 1 intermediate is being continued as usual. Lode large, and should judge fair battery stone.—Bogelhole shaft. South drive has been driven 7 feet, total 23 feet from shaft. At this point apparently have struck the fault which forces the lode west in a line with Gordon shaft. Will now shortly commence stoping, portions of the lode showing very good gold, and has during the week yielded very fair stone indeed.—North drive. Stopping has also been continued, and yielding very fair stone.—Everard shaft. North drive from Everard shaft has been driven 9 feet, full length being 167 feet from shaft; no change to report. Stope, as usual, continue to yield stone of fair grade. Lode from 3 to 5 feet wide.—Air shaft. South drive driven 6 feet, total 41 feet; stone from 18 inches to 2 feet wide, which continues to show gold.—Cockshott shaft. North drive driven 5 feet, total 91 feet. Lode from 3 to 4 feet wide, which, as stated in my last, I believe to be only a portion of the lode. This has now passed the south drive from the air shaft, and we now find there is fully 20 feet of solid ground between, consequently a crosscut will now be driven from one drive to the other, which will enable us to form an opinion as to which is the main body of stone, and ventilate the workings.—McCulloch shaft. McCulloch's shaft north of Everard's has been sunk 5 feet, total 27 feet. Lode strong and well defined.—Lode croppings. The work in connection with this, such as screening and treating the fines with the Terra-Secca machine has been continued, and so far as we can judge, with satisfactory results.—Crushing. During the week we have crushed 104 tons, which is not nearly as much as we anticipated would have been done at the commencement of the week, but the supply of water has been very short. We have tried to obtain a further supply, but there being little or none within reasonable distance, we have failed; we are now calling tenders for wathel, either small or large quantities, to be delivered on the mine, and if any are received that are at all reasonable, shall accept them for battery purposes.—Yield. Yield for the week has been 700 ounces of gold.—W. H. Matthews.

BAYLEY'S REWARD No. 1 SOUTH.—Mining report dated November 24: Main shaft (Gorrie's) has been sunk 3 feet, total depth being 133 feet; also done some necessary timbering. The lode is again slightly underlying east, a portion of it, 2 feet 6 inches wide, being at present in the shaft. It is hard, strong, and apparently well defined, from time to time showing gold. There is no western wall visible, and it has all the appearance of being very large; it is also difficult at present; consequently, I am afraid the sinking for a short time will be rather slow.—No. 2 shaft. No. 2 shaft for the week has been sunk 10 feet, total 86 feet; this will shortly be connected with the south drive from the main shaft.—No. 2 shaft (Bayley's line). The contractors for the week have made fair progress, total depth now being 91 feet, being 13 feet for the week. Ground still favourable for sinking.—Poppet heads. Having been able during the last few weeks to get the necessary timbers to complete the poppet heads, it will now, I hope, be shortly finished.—Machinery. The work in connection with the machinery and building has been pushed forward. With the latter all the main framework is almost completed, and will start to-day the iron roofing. As soon as this is covered we shall commence with the tables and other gold-saving appliances to the battery, which, in consequence of the hot weather, will require being covered previous to being fixed in their places.—W. H. Matthews.

BALAGHAT MYSOORE.—Captain J. Pryor, December 26: Ogle's shaft. Since the last report it has been decided that all possible expenses at this part of the mines must be reduced. It was, therefore, deemed advisable to allow the water to rise another 200 feet, and to keep it at the 410 feet level instead of the 600 feet level as at first arranged, and that the pitwork between these levels should be sent to surface. This is now being done, and the water is gradually following us up, it being to-day within about 30 feet of the 500 feet level.—Tennant's shaft. This shaft has been sunk 12 feet, or 73 feet 6 inches below the 420 feet level. The ground is still unproductive. The 420 feet level north has been driven 1 foot 3 inches, or 163 feet from the shaft, and then suspended. Not being satisfied that we were on the main part of the lode, we after driving another 1 foot 3 inches, or 163 feet from the shaft—suspended the driving of the 420 feet level north and brought the men back to drive on the western part (as referred to in my last report), and have since driven 19 feet 6 inches, or 163 feet 6 inches from the shaft, on its course. The quartz at first was over 3 feet wide, but has since become very much smaller. It is, however, now again slightly improving, it being to-day over 6 inches wide and worth 4 dwts. of gold per ton. The No. 1 winze in the bottom of this level has been sunk 8 feet, or 37 feet 6 inches below the level. The quartz is again improving in size, it being now 1 foot wide and of an assay value of 11 dwts. 7 grains of gold per ton. The rise in the back of this level has been advanced 5 feet 3 inches, or 8 feet 3 inches above the level. The quartz is 2 feet wide but assays only 2 dwts. 7 grains of gold per ton. I am hoping this will soon very much improve both in size and quality. The 420 south has been advanced 12 feet, or 77 feet 9 inches from the shaft. The lode continues of a kindly appearance. The midway level north has been extended 14 feet, or 97 feet 9 inches from the shaft. The quartz is 3 feet wide, and assays 13 dwts. of gold per ton. We have recently started at about 75 feet from the shaft to sink a winze in the bottom of this level; it is now down 3 feet. It produces quartz of 2 feet wide and of an assay value of 5 dwts. 2 grains of gold per ton. A part of this lode is evidently standing to the west of the present level, but to what extent we cannot yet say; we have, however,

decided to drive back south (from opposite the above winze) to test its value, and have advanced the level 8 feet on its course. It yields quartz of 3 feet wide, and of an assay value of about 5 dwts. of gold per ton. Two stopes in the bottom of the mid level yield quartz of from 3 feet wide, and assay on an average 1 ounce 5 dwts. 4 grains per ton. The 350 feet level north has been driven 12 feet 3 inches, or 239 feet 9 inches from the shaft. This end is still in dyke. The stopes in the bottom of this level produce quartz of from 1 to 2 feet wide, and assay on an average 8 dwts. 5 grains per ton. A stope in the back of this level yields quartz of about 1 foot wide, and assays 19 dwts. 7 grains of gold per ton. The stopes in the bottom of the 350 level south yield quartz of from 2 to 3 feet wide, but the value is somewhat improved, it now being worth 4 dwts. of gold per ton.—Surface. The general work is being pushed forward satisfactorily.

BRILLIANT BLOCK GOLD.—Mining manager's report for fortnight ending November 14: Underlie shaft sunk 10 feet, or 86 feet below No. 6 level. Reef 7 feet thick on east side and 2½ feet thick on west, say 15 dwts. stone. 6 level west driven 18 feet, total from shaft 176 feet. Reef in stopes 1 to 2 feet, say 10 dwts. stone. 6 level east driven 21 feet, total from shaft 193 feet. Reef 2½ feet, say 17 dwts. stone. Reef in stopes 2 to 3 feet thick, 10 to 18 dwts. stone. 5 level west driven 18 feet, total from shaft 370 feet. Reef 1½ foot to 18 inches thick, of 10 to 16 dwts. stone.—5 level east. Two stopes on H. W. reef. Reef 2½ feet, 25 dwts. stone. Six stopes on F. W. reef 1 to 3 feet thick, of say ounce stone.—4 level west. One stope, 1½ foot reef, 15 to 20 dwts. stone.—4 level east. Two stopes on H. W. reef. In one reef is 10 inches thick, of 1½ dwt. stone. In the other 1 to 2 feet of 15 dwts. stone. Stone raised, 1300 tons.

DON PEDRO.—Maquiné Mine half-monthly report, December 15: Operations for this part of the month have been carried on in sinking the shaft as fast as force will allow, the ground being still hard for excavating. We have now completed 7 fathoms under the 60. After another fathom sinking we shall fix another lift to enable us to reach the 75 fathom horizon.—Gold raising. This is still limited to a small force owing to the scarcity of labour. Places of operation for this part of the month have been confined to the driving of the 50 north, where the lode is large, but of low quality. The incline west has been pushed forward. The lode is large and of fair quality, but the line of gold still continues small and of low quality boxwork, but seeing the large amount of mineral standing in this direction, it leads us to expect that the line of gold will again become its usual quality and size.—Incline east. This has been continued on the dip of the lode, which is very large and of very fair quality, but the line of gold at present is of low quality boxwork, therefore, it is now extracted with the general work. Before the end of the month we hope to make a communication here with the incline rise from the 60 north. This will lay open a very large section of stopping ground from the 50 to the 60 on this part of the mine. The rise from the 60 has been continued very satisfactorily in a very fair lode. As soon as the communication is made with the 50 the force from the rise will be put to drive south from the 60 east to intersect the No. 1 line of gold in the southern extremity of the No. 8 shoot, also to lay open that part of the mine for stoping operations. Therefore we consider that the mine is opening very satisfactorily, and better results may be expected in the coming year.—Reduction department: All work in connection with the treatment of mineral has been carried on very satisfactorily. The amalgamation plates are answering remarkably well. No trace of gold is seen in the tail sand leaving the wash-house.—Morro Sta. Anna. The drive from Bawden's shoot has been continued. From the top lode, which is soft, shows splendid samples of free gold as good as the average general work of the Maquiné Mine.

FRONTINO AND BOLIVIA.—Mr. Eastice's report on the mines: La Salada, November 22: El Silencio. The shaft sinking has again resumed its active working. In the first part of the month there were several interruptions, and on Sunday last there was a breakage which caused the stoppage of the work in the bottom of the mine for three full days. The No. 6 level north having continued in a very disordered mineralised rock, has been temporarily suspended. The south end maintains much the same size and value, but split up into branches. This feature is not at all uncommon, and in a few feet of drive will most likely disappear. No. 5 level north and south improved.—No. 4 level north. This I mentioned a month ago as having been suspended, but a branch in the hanging wall was driven on, and finally opened out into a well-defined lode. Several exploration works had been made at this point, as the lode had been entirely cut off its strike by a crosscut. This level south there is nothing particular to notice. In the drive of the Bolivia crosscut a formation very like some lode has been met with, but as at the time of examination it was just cut into, it is premature to give an opinion of what it may be. I hope to be able to say more of this in about a month hence. The ground, too, has become more favourable for driving, and it can be hoped that good advances will be made, provided the air does not become bad. The stopes in the mine have improved, especially in the south ground, and the bottom of the mine southward is much better, the lode richer and wider than it has been for some time past. One very favourable feature is that it appears to continue in depth, and is near the shaft; therefore, after the crosscut from the No. 7 or 500 feet level has intersected the lode, it is more than probable that there will be rich ground for a long distance southward. The No. 7 crosscut will be started in the present month.—La Salada. The work at this mine has been delayed considerably, still the shaft has been sunk 5½ feet, and the No. 2 crosscut driven 8 feet. The ground is exceedingly hard and difficult to break, and consequently considerable time is spent with apparently little work done. It can be hoped that sinking and driving of the shaft and crosscut will go on more steadily as the dry season has set in. The work on the flat lode has again been resumed, and the points seem to show a slight improvement generally. The discharges are much the same. The No. 6 north is a little larger, and the quality of the mineral only fair. The stopes above the No. 4 level, mentioned in my letter of October 23, are gradually terminating, and we are, therefore, for the present obliged to break more mineral from the flat lode than heretofore. I see no alternative until the lode is intersected in the No. 2 crosscut. These circumstances are unfortunate, especially at the present time, and the bad state of the old mills adds to them. Only a very small quantity of ore can be milled, and that very badly, but the expense of making any repairs to these old mills would be a waste.—Cordoba. By the tabulated report you will observe that an excellent advance has been made in No. 8 crosscut, and within another month the lode should be intersected, if an equal proportion in the drive can be made. In the No. 7 level north the lode, although small, is promising, and is producing a fair quality mineral: this level south is in poor ground. The stopes have fallen back slightly in quantity and quality.—Tigrito. The No. 6 crosscut has been continued with the object of intersecting a lode, or at least what appears to be one, it having a strike parallel with the Tigrito lode. As the ground was fair for driving, advancing with the crosscut was considered a better test as to the continuance of this lode in depth, its size, quality, and general characteristics, and should it prove to be worth working, it will be a valuable adjunct to the Tigrito Mine. It is intact to the surface, beyond a few pits scattered here and there along its outcroppings. The drive west has opened up better mineral, and the advances made in the rises are such, that soon there will be adequate stopping ground for a choice of mineral. On the whole, the mine is in a very promising condition, and will be producing a good monthly yield within a very short period.—Marmajito. The No. 2 crosscut is being continued, and the advance made is slow, the ground being exceedingly hard. The lode appears to have improved slightly, as has also the mineral extracted from the rise in the back of the level west. Other points are much the same; however, enough mineral is now extracted to keep the mill at work full time.—Marmajito. The deep level crosscut progresses slowly, mainly through the hardness of the rock it is driven in. This drive is of no particular importance, and the number of men has been reduced in consequence. However, these are put on a crosscut further west and above the deep level crosscut, with the object of cutting some mineral at that point.—La Salada, December 7: There is very little change in any of the

mines since my last letter. However, at the time of writing, some of the diaries from the mill have increased, and the amount of gold produced since the end of the last "mill month," is in excess of that of the same date in last month, and unless some accident occurs, the probability is that the produce will equal the past month.—Silencio. Owing to stoppages of the Pocuné water, for repairs to flumes, changing these, and the course of the stream, in places where new excavations have been made, there has been an unavoidable influx of water in the shaft and No. 6 levels, and although these changes were made with the greatest possible speed, the accumulated water in the mine was not drained until some days afterwards. This has, therefore, impeded the sinking of the shaft, and to some extent the work in No. 6 levels. Work has been resumed in the No. 6 levels, and the lode in the end and in stopes above maintains its quality. No. 5 levels are much the same. No. 4 north has improved, but south no change has occurred. The ground in the Bolivia crosscut is still more favourable for driving, and is advancing very fairly. Other points remain without any perceptible change, and the yield of mineral and bolion is very fair.—La Salada. The stoppage of the Pocuné water had, of course, the same effect at this mine as at El Silencio, added to which the mills were idle also. All work, however, is at present again in its usual active state, except the shaft sinking, which is being hindered by the placing of new timbers, &c., for the better accommodation of driving the crosscut No. 2. The mineral from the stopes is much the same in quality, and all other points show no change.—Cordoba. The lode in the No. 7 end north has opened up, and is now about 18 inches thick of fairly good mineral. The stopes are much the same, and the crushings show an increase compared with this date last month. The No. 8 crosscut advances rapidly, the work having assumed a very interesting feature, as that soon the intersection of the lode is expected.—Tigrito. As the drive west advances the lode widens and is of better quality, which, to judge from the lode worked in No. 5 and above it, foreshadows a good future. The stopes remain much the same, and producing sufficient mineral to keep the mill running full time.—Marmajito and Marmajito. At the former mine the lode in the level in No. 2 crosscut is a little larger, but still encased between hard walls, and is difficult to break in consequence. At the latter the crosscut is driven tardily, there being nothing important to expect, besides some new works above are commenced to verify the rather doubtful distance which is thought must be driven to intersect mineral.—New work. The new watercourse at Tias is advancing rapidly, the foundations of new boiler and hoisting engines are almost finished, and will be waiting for the parts of the new machinery. The framework for the La Salada new mill is being done slowly. New wheel at work at Maria Dama mill will soon be finished.—General. The mines throughout are looking well, and the yields from the mills up to date show fair for a good month for December. The prospects, too, for the future I consider are very satisfactory, as almost at once the Cordoba lode will be intersected; the mine at Tigrito improves as it is being opened. The Marmajito is also improving. There is almost a certainty of having rich ground when the lode is cut by the No. 2 crosscut at La Salada, and El Silencio is rich, and seems to bid fair to continue so. Of course, some time will elapse before all the points mentioned are developed and proved, but I consider the present state of things, and the preparations now in hand, kept pace with the designs already laid out, will in a short time put the mines in a better position than they have ever been.—Geo. W. Eastice.

GREAT SOUTHERN TIN AND GOLD FIELDS.—The mining manager reports: Toora, December 8: The length driven for the two weeks is 13 feet. The men have been down with a mild attack of influenza, not sufficient to stop work, but they have not worked with their usual vigour. This will account for the slight diminution in the general average done hitherto.

HARRIETVILLE.—Fortnightly report of Mr. T. G. Davey, dated December 7. Mons Meg Mine. Drive south of winze 100 feet below tunnel D advanced 6 feet, total 155 feet. Lode much disordered and barren. Commenced to crosscut west from this drive.—Stopes: Underhand stope on main shoot below D lode 7 feet wide, assaying 3 dwts. per ton. Lode in stope at back of drive south of tunnel D 12 feet wide assaying 4 dwts. per ton. Stope under 240 feet level below J lode 2 feet wide assaying 6 dwts. per ton. Lode 2 feet wide, assaying 18 dwts. per ton. Underhand stope south of J lode 18 inches wide, assaying 1 ounce 15 dwts. per ton.—St. Bernard Mine. Drive south of lower tunnel on United Miners lode advanced 10 feet. Lode small, but carrying colours of gold. This is an encouraging feature. Upper tunnel near rich vein advanced 35 feet, total 42 feet north of Pennsylvania shaft. Lode fairly well defined and prospecting from 5 dwts. to the ounce of gold per ton.—Surface. In the tunnel on Redpath's lode east of the Gaerdon. The auriferous vein has risen to the back of drive, and is evidently dipping north. We are about to sink on this vein.

HARMONY GOLD AND LAND.—The following is an extract from the manager's letter of December 20: There is now much more work going on along the Murchison range. The Mills Syndicate is busy erecting a 10-stamp battery. The Gravelotte has another 20 or 30 heads on the road I hear. Moorestrops's has a five-stamp battery on the way from Delagoa Bay, and Block B is still cranking at the President reef and getting about 1½ ounce to the ton of rock. Besides these there is a small prospecting battery at work at W. T. Konjor, turning out 2½ ounces to the ton. The Sutherland Reef are still erecting machinery.

MILLS' DAY DAWN UNITED.—Mining manager's report, fortnight ending November 19: No. 9 level west extended and timbered 12 feet, total from plat 17 feet. No. 9 level east extended 5 feet, total from plat 10 feet. No. 8 west hanging wall crosscut extended 10 feet, total from level 48 feet, on 3 feet 6 inches of medium quality stone. Stopes average 3 feet 6 inches of fair quality stone.—No. 8 level west. No. 1 winze has been sunk 28 feet, total from level 39 feet. No sign of reef yet. No. 8 level west main reef extended and timbered 13 feet, total 108 feet. Stopes average 5 feet of heavy mineral stone.—No. 7 level west. No. 5 winze sunk 11 feet, total 93 feet showing about 18 inches of fair stone. Stopes average 4 feet of mineral stone on the main reef, and on the foot wall 3 feet. Hanging wall stope averages 3 feet of fair quality stone.—No. 6 west main reef. The stopes average 3 feet of heavy mineral stone.—No. 5 level west. No. 1 footwall crosscut east drive extended and timbered 31 feet, carrying 2 feet of fair quality stone. Footwall stope average 3 feet heavy mineral stone. Stopes on main reef from 2 to 3 feet thick of good stone.—No. 5 level east. No. 2 footwall crosscut extended 21 feet, total 71 feet.—No. 4 level east. No. 3 footwall crosscut extended 23 feet.—No. 3 level east. We are stopping on 1 foot of fair stone. Stone raised, 2000 tons.

MOSMAN.—Manager's report for November 24: North Australian Mine, Beyer level. North stope are looking well. Reef 2 to 18 inches of heavy mineral stone. Underhand stope not so well mineralised.—Beyer level. South stope no change. Reef 15 inches, rather white.—Wyndham mine. No. 9 level south. Stopes looking better, 4 to 10 inches well mineralised stone.—No. 11 level south. No change. Reef 12 inches, fairly mineralised.—No. 12 level north. 4 to 10 inches of stone, not so good as usual.—No. 13 level south. No change. Reef 6 to 10 inches, well mineralised. No. 13 level north driven 17 feet. Total from shaft 263 feet. Reef 10 inches thick; has just made, carrying a little mineral.

MYSOORE REEFS (Kangandy).—Fortnightly report of Captain M. Scantlebury, dated December 26: Underlie shaft. The 325 feet level north has been extended 23 feet 6 inches, now 66 feet 6 inches from shaft. The lode in the present end is 3 feet wide, composed of quartz, arsenical pyrites, and hornblende schist, assaying 4 dwts. 13 grains of gold to the ton. Winze below 325 feet level north has been sunk 9 feet 6 inches, now 9 feet 6 inches below the level. The quartz is 14 inches wide, assaying 1 ounce 12 dwts. 16 grains of gold to the ton. Rise above 325 feet level north has been put up 9 feet 3 inches above the level. The quartz is 15 inches wide, assaying 1 ounce 21 grains of gold to the ton. Winze below 250 feet level north has been sunk 8 feet, now 10 feet below the level. The quartz is 1 foot 3 inches wide, assaying 18 dwts. 6 grains of gold to the ton.—Vertical shaft. The crosscut east at the 260 feet level has been advanced 15 feet 6 inches, now 22 feet 6 inches from shaft. In two or three days more we shall intersect the lode.

forests which subsequently covered the deposits have favoured the preservation of the gold in them from the wearing and denuding action of the water. Many of the Eastern Siberian gold deposits show undoubted traces of the influence of glaciers. Thanks to the cold climate which, following the Glacial period, many of the gold deposits have been preserved to the present day in their original form, so that they present an instructive example and traces of a geological period partially contemporary with man, who has even left indubitable traces of his presence in the form of arrow-heads made of jasper and quartz, hammer heads, ornaments, coins, bones, &c.

Although Eastern Siberia employs only three times as many men as Western Siberia, yet its production is nine or ten times as great. This is due to the greater richness of the deposits worked in the former region. Owing to the dearth of provisions and forage, and consequently of labour and horses in Eastern Siberia, the exploitation of the poorer deposits is impossible with the methods now in use for treating the gold-bearing sand.

When in 1829 the Siberian gold industry was made free to private individuals, a great number of enterprising men of large capital found their way to this remote region. The gold miners became rich themselves, and aided the development of the region with a generous hand, laying down roads to inaccessible places, establishing a steam navigation along the abundant Siberian rivers, and sacrificing considerable sums to the erection of national institutions, such as schools, churches, and every kind of charitable and pious work. The development of the gold industry reflected itself upon the towns of Tomsk, Krasnoyarsk, Irkutsk, Chita, Nerehinsk, and Blagoveschensk.

Beyond the 40,000 miners employed at the mines themselves, the Siberian gold industry gives occupation to a considerable population in the transport of goods to the mines and other auxiliary works. Indeed, it indirectly aids the development of agriculture in the neighbouring agricultural districts, and it presents a profitable market for their produce.

The extent of the sums acquired by the country from the gold industry is seen from the following example:—During the three years, 1887 to 1889, the wages of the men employed in the gold mines of the Olekminsk and Vitimsk systems amounted to 6,789,000 roubles, while the cost of the chief objects of consumption at those mines was 12,268,000 roubles. These figures give an excellent idea of how vast an amount of money the gold industry distributes over the entire region, and how it supports its population, trade, and industry.

Passing from these general data respecting the Siberian gold industry, its individual features, according to the systems of the chief Siberian rivers, may be considered.

In the vast basin of the Obi the gold industry has been established:—1. On the steppe land extremity of Siberia, in the Provinces of Akmolinsk and Semipalatinsk, along the rivers belonging to the system of the left branch of the Obi-Irtys system of the River Irtys. 2. On the western side of the Kouznets Alatau in the Mariinsk region of the Government of Tomsk. 3. In the Altai mining region. 4. On the eastern side of the Kouznets Alatau in the Achinsk region of the Government of Yenisei.

Owing to the difference of the natural conditions in the different gold-bearing regions, the modes and processes of extraction also differ. In the steppe region the mining is exclusively open workings, so that the deposits with deep lying strata are not worked owing to the great expense of the timber required for supporting underground workings. Thanks to the warm climate, the washing of the sand is carried on from April to October—that is, during about seven months. The workings are surrounded by a nomad Kirghiz and Cossack population, who work in the mines partly for so much per cubic sajene of earth, and partly at so much per zolotnik of gold extracted, and besides this, they serve as the providers of provisions to the mines. Hence the gold discovery in the steppe region is not hampered by great preliminary expenses. Moreover, the wages and living of the miners is far less in the steppe than in the forest region and, therefore, it is possible to exploit comparatively very poor deposits, in which the amount of gold does not in some cases exceed 8 doleys per 100 pounds of sand, or '00002 per cent.

In the forest region which embraces the Altai mining region, the Mariinsk region of the Government of Tomsk, and the Achinsk region of the Government of Yenisei, the climate is more severe, and the washing of gold can only be carried on during five, or at most six, months. The population is more sparse, and the conditions of the industry begin to acquire another aspect, more like that which predominated in general in Eastern Siberia. In the Achinsk region the gold industry is concentrated at the sources of the Chulyma, along the rivers Belaya, Chernaya, and Sarala-Use. In the Altai mining region the gold mines are exploited both by His Imperial Majesty's Cabinet and by private individuals.

The gold industry is very feebly developed in the Akmolinsk and Semipalatinsk provinces. In the Mariinsk region the production of gold is subject to very slight fluctuations, notwithstanding the increased number of deposits under exploitation, and the larger amount of gold-bearing sand treated in them. This shows that the richer deposits have been exhausted, and that the exploitation of the poorer can be carried on profitably owing to the low price of labour and provisions at the gold mines of this region. The amount of gold obtained in the Altai region is constantly increasing, owing to the gold-bearing sands being of very uniform richness, while the number of deposits worked is on the increase. This also proves that the stores of gold in the deposits of the Altai region are not yet exhausted. Gold quartz is worked at two mines in the Altai, but the amount produced is still inconsiderable. During the last ten years the production of the Achinsk region has varied very slightly. Of all the gold deposits in the Obi system, those in the Mariinsk, Altai, and Achinsk regions are the most profitable for exploitation, owing to their proximity to the railway; and there is reason for thinking that the extraction of gold will be further developed in these districts.

The great river province of the Yenisei comprises four gold-bearing regions, the Minousinsk, Krasnoyarsk, Yeniseisk (which sub-divides itself into two parts or systems, the northern and southern), and Nizhneoudinsk.

The Minousinsk region, where gold was first prospected for in 1832, enjoys a comparatively moderate climate, an abundance of pasture and corn, and yet the gold industry of this region develops very slowly. This is chiefly owing to the distance, 300 to 350 versts, of the deposits from the centres of population. The amount of gold produced in the Minousinsk district remains nearly stationary.

In the Krasnoyarsk region, where the exploitation of gold was started in 1847, only three deposits are worked at the present day. The amount of gold washed in 1884 was nearly 6 pounds, while in the remaining years it varied between 1 and 4 pounds.

In the Yeniseisk region the most important gold-producing localities are the valleys of the Rivers Savaglikone, Ogne, Kalami, and Enashimo, belonging to the system of the Podkamennaya Tougouski, and also of the Aktolika and Bangash belonging to the basin of the Pita, all in the northern system; the basin of the River Ouderei, which falls into the tributary of the Angara, the Kameuka, and the basins of the rivers Bolshaya, Mourghapaya, and Pita, all in the southern system. In the majority

of instances the rivers of both systems have a rapid current, owing to the sharpness of their fall. During the heavy spring rains, they rapidly become swollen and overflow their courses, and although, owing to the steepness of their beds, they do not overflow to any great extent, nevertheless, they frequently cause great damage to the gold workings. On the other hand, during the prolonged summer droughts, some of them become so shallow that it is necessary to stop washing the sands.

The rivers in the Yenisei regions are not navigable, with the exception of the lower portions of the Yenisei, Podkamennaya Tougouski, and Bolshaya Pita. The more considerable tributaries of these rivers are only navigable to small boats and rafts.

The gold extracted in the Yeniseisk region is generally finely granular, tabular, and, as it were, rubbed; a coarsely-grained gold of high purity is found along the Rivers Ogne and Enashimo.

In the northern system the thickness of the gold-bearing deposits varies from 2 to 8 feet, although there are some which are as much as 15, 20, and even 35 feet thick. In the southern system the thickness of the deposits generally varies between 2 and 12 feet. The superficial covering of peat is in both cases between 5 and 30 feet. The average richness of the gold-bearing sand in the northern system is about 31 dolias of gold per hundred pounds, but in the southern system it is somewhat less. However, in both systems there are workings in which the quantity of gold reaches one zolotnik per pound.

In the Yeniseisk region the first deposits were discovered in the present southern system, along the rivers Ouderei and Mamona, in the year 1833. At that time the workings of the Berusinsk system, in the Nizhneoudinsk region of the Government of Irkutsk, were of great importance owing to the abundance of gold they yielded. As, however, the newly-discovered deposits in the Yeniseisk region were found to excel those of the Berusinsk system in richness, numerous prospecting expeditions were dispatched to this region, and in 1839 the deposits of the northern system were discovered in the valleys of the Rivers Aktolika and Vangash, while in the beginning of the forties all the present gold districts were covered with claims, although their exploration is being carried on to the present day. In the Yeniseisk region, as everywhere, the richest deposits were discovered first, and, therefore, the yield of gold from this region attained its maximum soon after its discovery, and then began to gradually decline. By the amount of gold produced, the Yeniseisk deposits stand among the richest in Russia. In the first year, after the gold washing was begun, and when only one mine was under exploitation, with 190 miners, the yield exceeded 7½ pounds of gold. Subsequently the number of mines and the yield of gold increased year by year; the maximum yield coincides with the year 1847, when 1212 lbs. (12½ pounds) of gold were produced by 12,100 miners. This amount formed about 65 per cent. of the production in Russia during that year. After 1847 the amount of gold extracted began to lessen, notwithstanding the increased number of miners, which in 1854 amounted to 20,567, and also the increased number of mines and the quantity of sand washed therein. The exploitation of the gold no longer formed an attraction for large companies and gradually began to fall into the hands of small enterprises.

In 1882 the exploitation of venous gold was started in the Yeniseisk region, but it develops very slowly, and as yet the production has never exceeded 8 pounds, and in recent years has even been under 1½ pound.

The gold workings of the Nizhneoudinsk region of the Government of Irkutsk and of the Kansk region of the Government of Yeniseisk are situated along the system of the River Birusa. Only the upper courses of this river pass through the Nizhneoudinsk region, after which it flows through the Kansk region of the Government of Yeniseisk. At the present time these regions occupy almost the last place among the Siberian gold-producing regions, although formerly the Berusinsk system was among the richest in Eastern Siberia.

The first discovery of gold in the Berusinsk system was made in 1836. The richness of the deposits of this system attracted numerous prospecting parties, and already in 1839 the Kansk and Nizhneoudinsk regions yielded about 41½ pounds of gold out of a total of 48½ pounds extracted in Eastern Siberia. The maximum yield of gold from these regions was in 1842, when it equalled 204 pounds 6 lbs., or about 20 per cent. of the total production in Russia. Since then the production of gold in these regions has gradually decreased, and in some years has even fallen below 15 pounds. However, this decrease should not be ascribed to the exhaustion of the mines but chiefly to the discoveries of gold in other systems, and there is reason for thinking that if more detailed explorations were made, and the exploitation of the deposits more scientifically carried out, then the Berusinsk system would once more stand to the fore.

REPORTS FROM THE MINES.

BRITISH MINES.

DEVON GREAT CONSOLS.—Wm. Cleme, January 16: Since the date of last week's report we have had a severe snowstorm, which has caused some hindrance to our workings throughout the mines, and to the shipping of arsenic at Morwellham, and the forking of the water at Watson's has been slow owing to the partial blocking of the larger wheels at Blanchdown. The stopes are looking well, and the weather having become more favourable, we hope our surface operations will now go on without further loss of time.

DRAKEWALLS.—Moses Bawden, January 16: The shareholders will be pleased to know that the engine shaft has been sunk to the 190, the crosscut driven south 14 fathoms and out into the lode 3 fathoms; and we are now driving west on it, so as to get through the crosscourse, which should be only a few feet to west of the crosscut, and as the crosscourse usually shifts the lode to the right hand, we expect, on cutting through it in a few days from this time, to get into the south ore-bearing part, and the indications that we shall get a very profitable lode are good, as we have rich stones of arsenical mende, copper ore, and tin. Our stopes are maintaining their productive character, and in spite of the very unfavourable winter we are having our returns monthly are within a small amount of meeting our costs, and as the spring advances we shall undoubtedly do better.

LEADHILLS.—W. H. Paull, January 14: Brown's vein. In the 160 fathom level driving north of Jeffrey's shaft the vein is 4 feet wide, composed chiefly of stone, intermixed with spar, spotted with ore, and a little water issuing from forebreast. The 160 fathom level south of Wilson's shaft is communicated with winze sunk from 145, which has thoroughly ventilated this section. Vein in forebreast 4 feet wide, strongly mixed with spar, but without ore. In stopes over this level south of Jeffrey's shaft the vein is now worth 20 cwt. of lead ore per fathom. No. 2 stopes over the 145 fathom level north of Jeffrey's shaft will produce 35 cwt. of ore per fathom. Nos. 3 and 4 stopes over same level north of ditto are worth on an average 28 cwt. of ore per fathom. The vein in drift going south over the 130 fathom level is 6 feet wide, composed of spar, stone, and lead ore, now producing 20 cwt. per fathom. In the 115 fathom level driving north of Jeffrey's shaft the vein is 4 feet wide, of a kindly appearance, and there are indications for an improvement. No. 2 stopes over this level is on vein 4½ feet wide, yielding 30 cwt. of ore per fathom. The 100 fathom level south of Wilson's shaft is going forward at a fair rate on vein 4 feet wide, containing a good mixture of spar, and letting out a little water

—a favourable indication. In the crosscut going eastwards towards Rak vein at the 100 fathom level we have recently passed through a small branch of quartz, showing spots of lead ore, and the ground has become a little harder. The vein in the 85 fathom level south of Wilson's shaft continues unproductive. The stopes over this level south of Wilson's shaft will yield 50 cwt. of ore per fathom. In drift over the 70 fathom level south of Wilson's shaft the vein is worth 40 cwt. of ore per fathom. The vein in stopes over the 50 south of flat-rod shaft will produce 30 cwt. of ore per fathom. In stopes over the 35 south of same shaft the vein yields 25 cwt. of ore per fathom. The stopes below the 35 south of ditto, on vein 4 feet wide, is yielding 25 cwt. of ore per fathom. At Gripp's adit going south Sarrowcole vein continues of a strong and promising character, with good indications, letting out a heavy feeder of water, and at times producing stones of lead ore. Another severe snowstorm took place on Saturday, continuing throughout yesterday and last night, but it is milder to-day. Surface operations are being dealt with as far as practicable, though much impeded by the severe weather and snow drifting, &c.

WHEAL FRIENDLY.—St. Agnes, January 14: We have six men driving the intermediate end east, at £8 per fathom. During the past month we have met with a crossing of spar which disordered the lode for the time, but I am pleased to say that the lode is again improving and is producing good stones.

WEIRDALE LEAD.—Report on Weardale Company's mines for the week ending January 12:—Groverake. Opening Armstrong's rise from 30 fathom level, we are now up to the rise, and the men are cutting over to the north. In crosscutting south from Adamson's drift to hole to above rise we have cut the vein lead, which is rather sparry and not without ore. Firestone drift east, sparry vein, but poor in ore, worth 10 cwt. per fathom. Groverake cubic fathom stopes worth 12, 10, 10, 12, 14, 12, and 18 cwt. per fathom. Groverake tribute ore returned for the week at 25 bings.—Boltsburn. Crosscutting south from old rise above Watts' level searching for flats, we have gone through some broken ground, but it is now looking firmer and shows a little ore spar and some ore, but not to value. North flat, Watt's level east, worth 40 cwt. per fathom. Workings in south flats worth 30, 45, 36, 30, 28, 50, 16, and 20 cwt. per fathom.—Greenlaws. Nattrass Gill drift, stopes worth 20 and 16 cwt. per fathom.—Watson's drift. Vein 4 feet wide of spar, hard rider and other vein stuff with some ore, but none to value.—Lowe's drift. Slaty hazel drift west from rise, vein 3 feet wide, looking better for ore, worth 16 cwt. per fathom. East from rise, vein 2½ feet wide, rather improved for ore, worth 12 cwt. per fathom. The crosscut in scar limestone from B. Lowe's rise is still composed of very strong flats and cavities, but no ore of any importance. Lee's sump sinking, vein 3 feet wide, worth 20 cwt. per fathom, stopes worth 32 cwt. per fathom.—Greenlaws. Tribute ore for the week returned at 14 bings.—Sedling. Driving 64 level east, vein looks fairly well, worth 16 cwt. per fathom. 64 level west, strong vein in plate, composed of floorspar, rider, and a little ore. East stopes above 64 level worth 14 and 14 cwt. per fathom. Opening 56 level, have done 2 fathoms east from old shaft; kindly vein about 1 foot wide, of spar moderately mixed with ore. Ore raised for the week, 60 tons. No ore dressed, and only 26 tons of lead smelted. All surface work is stopped by the snow and frost.

COLONIAL, INDIAN, AND FOREIGN MINES.

LADY LOCH.—The manager under date, Coolgardie, December 8, writes as follows:—The south reef has been fairly well prospected. One shaft on the hanging wall side of the reef has been sunk 20 feet, and a drive been put in south to cut the reef. After driving 6 feet the reef was cut, showing 4 feet of quartz mixed up with a mullock formation. About 12 feet from this shaft another shaft was started and sunk 14 feet showing the reef to be about 6 feet wide carrying good gold. When I took charge I made this shaft the main one, and continued sinking, carrying the reef all the way. Another shaft was sunk 17 feet further south of the main shaft to a depth of 50 feet in soft country, and a drive was put in 28 feet north, thus passing through the main reef. The reef at this point was showing good gold freely. The main shaft passed through this drive, proving the reef all the way. The shaft is now sunk to a depth of 90 feet, with good prospects. From the 80 feet downwards fair gold was showing in the solid stone, and cross in the bottom of the shaft: the reef is 4 feet 6 inches wide, and showing gold all through the stone. We are very close to water, and with another 10 feet of sinking water would be struck, and as the reef is so large a good supply is certain. At the present time water is a very great item, as I could sell as much water as could be pulled at the rate of 7s. per 100 gallons.

SHEBA.—The following report has been received from the general manager for the month of November: Mine, No. 3 level. In prospecting the old under-hand stopes from No. 3 to No. 5 level a little good ore was discovered, which carries considerable visible gold.—No. 4 level. We have again opened the old west stopes where we have discovered a small seam of good ore.—No. 5 level. The west end extended 41 feet. No. 9 crosscut was driven 9 feet. No. 10 crosscut was driven 27 feet.—No. 6 level. We have discontinued stoping on this level and are sinking the No. 7 level continuation of 17 winze.—No. 7 level extended 27 feet west.—No. 8 level. In underhand stoping on this level we have extracted some very good ore, showing visible gold freely.—No. 9 level. We are here cutting out a plat at the foot of No. 30 winze.—Lower level tunnel. This has been extended 24 feet west in slate, making a total of 1316 feet. At 1230 feet we crosscut towards the reef 118 feet during the month. At 113 feet in the north of this tunnel we cut a quartz stringer 2 feet wide, and on the north side of that we cut the conglomerate. Both the stringer and the conglomerate show considerable iron pyrites, but no gold. Two rock drills are now working in the end of the tunnel, and two others in the crosscut.—Annie's Fortune Block tunnel. This drive has been extended 28 feet; the ground shows signs of improving.—Incline shaft. This was sunk 10 feet 6 inches during the month. This shaft has been discontinued as we are now breaking rock from the quarry for the mill which interferes with sinking. A slight improvement was noticed in the bottom of the shaft when we quit sinking.—Quarry. We are preparing to again work this quarry, as recent prospecting has shown us some fairly good ore, and then, being such a large body of ore, it will be cheaply stoped.—Edwin Bray Block. The shaft to connect with Low Level tunnel sunk 22 feet during the month. The crosscut north into Annie's Fortune Block was not continued during the month, as the contractor was short of labour.—Oriental Block. Good Hope shaft. The skiproad has been completed in this shaft. The pump filled ready for sinking. A contract for sinking to the Low Level Tunnel has been let. The hoisting engine has been placed in position, and we are now ready to start pumping to clear the shaft of water preparatory to sinking.—Rowe's winze. We have forked the water from this winze, preparatory to sinking it another lift, so as to prospect the ground in this part of the property.—Surface operations. The hoisting engine and self-tipping skips at the Good Hope winze are nearly ready for starting up. The two locomotive boilers erected at the mine have been providing steam for the last month to the large air compressor, which enables us to run four instead of two drills, as was the case when only using one boiler. A cutting for a tram road has been made round the side hill from Phillip's shaft to the Good Hope shaft. Rails will now be laid to connect with the incline up to Phillip's shaft, so that we can haul fuel from where it is delivered by ex-wagon to the Good Hope shaft. New work, trench for cable. This is being extended as fast as a large gang of workmen can do it; the ground below the surface has nearly all to be blasted. So far, the trench is ahead of the cable layers, who are, however, following up closely.—Generating station. Work on the foundations and retaining walls is progressing favourably.—Turbine pits. The masonry work to carry the three turbines and forming the mill race is completed. The building for generator house is framed ready for erection. The new mill building is going up readily; the framework of tanner building and part of that of the battery has been erected, also part of the battery timbers. The mortar blocks are now being placed. All work in connection with the new mill is being pushed on as fast as we can with the amount of labour we have at our disposal.

APPANTOO GOLD.—Herewith I beg to send you monthly report for November: Cawston shaft. Have timbered the crosscut (104 feet from surface) from shaft to reef, and have cut into reef 6 feet, but have not reached footwall yet. Am stacking the ore on surface until the tramway is completed to take it to the old mill. This tramway will be continued on to the new mill site.—Adit shaft. Have timbered this shaft from No. 1 level (50 feet) to adit, and commenced to take out ground overhead for the engine and headgear.—Thompson's tunnel. This is now in a distance of 200 feet. Size of reef 9 feet.—Eslan's east. Timbering finished here, and stopping commenced. Size of reef 7 feet.—Eslan's west. Nothing done here during month.—Swift's adit. We are now in a distance of 92 feet east with a good body of ore in face 13 feet wide.—George's adit. This is now in a distance of 56 feet going east, and west 60 feet, with 12 feet of stone in both faces.—Worgent's tunnel. We are now in here a distance of 167 feet which is well timbered and leading stope within 25 feet of the face. Size of reef 7 feet.—Remarks. Have not worked in all the places now opened up in your mine, as the ore is not needed until we have more crushing power. Average size of reef throughout 9 feet.—Thomas Worgent.

AUSTRALIAN BROKEN HILL CONSOLS.—The mining manager reports by mail for the fortnight ended December 6: Block 96. 280 level east prospecting drive, No. 4 rise stope, driven 38 feet. Stopping continuing, but without obtaining any rich ore. The lode in the northern and north-eastern stopes is widening and rising very fast; in the eastern stope the lode is about 2 feet wide and containing small veins of iron. North-west drive driven 11½ feet, total 32 feet 6 inches. No change.—Incline 2½ level west. Stopes driven 16 feet. No change. Galena and a trace of iodide of silver has been met with in a vein of iron. No. 1 rise off No. 4 level east off incline stope driven 15 feet. Stopping east and west at point mentioned in last report. The lode is small, consisting of carbonate of iron which carries galena and a little fahlerz.—Note: The quantity of rock mined during the fortnight was 26863 cubic feet.

BAYLEY'S REWARD CLAIM.—Summary of ore and gold return for fortnight ending 10th November:—Estimated amount of stone at grass, 4225 tons; stone raised, 50 tons; stone treated, 225; gold won, 1400 ounces.—Mining report, dated November 24: Sylvester shaft since last report has been sunk 7 feet, total being 307 feet. Ground up to the present is favourable for sinking.—North drive, 280. The north drive at the 280 level is driven 14 feet, full length 51 feet from shaft. We are still following the fault, which is running slightly east by north east. There is no change beyond a slight drip of water showing in the face.—160 level. Are at present making preparations for sinking winze, or continuing Gordon shaft to the 220 level. This will partly test the lode and ventilate the workings.—Gordon shaft. Work in the stopes in the bottom of the No. 1 intermediate is being continued as usual. Lode large, and should judge fair battery stone.—Bogelhole shaft. South drive has been driven 7 feet, total 23 feet from shaft. At this point apparently have struck the fault which forces the lode west in a line with Gordon shaft. Will now shortly commence stopping, portions of the lode showing very good gold, and has during the week yielded very fair stone indeed.—North drive. Stopping has also been continued, and yielding very fair stone.—Everard shaft. North drive from Everard shaft has been driven 9 feet, full length being 167 feet from shaft; no change to report. Stope, as usual, continue to yield stone of fair grade. Lode from 3 to 5 feet wide.—Air shaft. South drive driven 6 feet, total 41 feet; stone from 18 inches to 2 feet wide, which continues to show gold.—Cockshot shaft. North drive driven 5 feet, total 91 feet. Lode from 3 to 4 feet wide, which, as stated in my last, I believe to be only a portion of the lode. This has now passed the south drive from the air shaft, and we now find there is fully 20 feet of solid ground between, consequently a crosscut will now be driven from one drive to the other, which will enable us to form an opinion as to which is the main body of stone, and ventilate the workings.—McCulloch shaft. McCulloch's shaft north of Everard's has been sunk 5 feet, total 27 feet. Lode strong and well defined.—Lode croppings. The work in connection with this, such as screening and treating the fines with the Terra-Secca machine has been continued, and so far as we can judge, with satisfactory results.—Crashing. During the week we have crushed 104 tons, which is not nearly as much as we anticipated would have been done at the commencement of the week, but the supply of water has been very short. We have tried to obtain a further supply, but there being little or none within reasonable distance, we have failed; we are now calling tenders for water, either small or large quantities, to be delivered on the mine, and if any are received that are at all reasonable, shall accept them for battery purposes.—Yield. Yield for the week has been 700 ounces of gold.—W. H. Matthews.

BAYLEY'S REWARD No. 1 SOUTH.—Mining report dated November 24: Main shaft (Gorrie's) has been sunk 3 feet, total depth being 133 feet; also done some necessary timbering. The lode is again slightly underlying east, a portion of it, 2 feet 6 inches wide, being at present in the shaft. It is hard, strong, and apparently well defined, from time to time showing gold. There is no western wall visible, and it has all the appearance of being very large; it is also difficult at present; consequently, I am afraid the sinking for a short time will be rather slow.—No. 2 shaft. No. 2 shaft for the week has been sunk 10 feet, total 86 feet; this will shortly be connected with the south drive from the main shaft.—No. 2 shaft (Bayley's line) The contractors for the week have made fair progress, total depth now being 91 feet, being 13 feet for the week. Ground still favourable for sinking.—Poppet heads. Having been able during the last few weeks to get the necessary timbers to complete the poppet heads, it will now, I hope, be shortly finished.—Machinery. The work in connection with the machinery and building has been pushed forward. With the latter all the main framework is almost completed, and will start to-day the iron roofing. As soon as this is covered we shall commence with the tables and other gold-saving appliances to the battery, which, in consequence of the hot weather, will require being covered previous to being fixed in their places.—W. H. Matthews.

BALAGHAT MYSORE.—Captain J. Pryor, December 26: Ogle's shaft. Since the last report it has been decided that all possible expenses at this part of the mine must be reduced. It was, therefore, deemed advisable to allow the water to rise another 200 feet, and to keep it at the 410 feet level instead of the 600 feet level as at first arranged, and that the pitwork between these levels should be sent to surface. This is now being done, and the water is gradually following us up, it being to-day within about 30 feet of the 600 feet level.—Tennant's shaft. This shaft has been sunk 12 feet, or 73 feet 6 inches below the 420 feet level. The ground is still unproductive. The 420 feet level north has been driven 1 foot 3 inches, or 163 feet from the shaft, and then suspended. Not being satisfied that we were on the main part of the lode, we—after driving another 1 foot 3 inches, or 163 feet from the shaft—suspended the driving of the 420 feet level north and brought the men back to drive on the western part (as referred to in my last report), and have since driven 19 feet 6 inches, or 163 feet 6 inches from the shaft, on its course. The quartz at first was over 3 feet wide, but has since become very much smaller. It is, however, now again slightly improving, it being to-day over 6 inches wide and worth 4 dwts. of gold per ton. The No. 1 winze in the bottom of this level has been sunk 8 feet, or 37 feet 6 inches below the level. The quartz is again improving in size, it being now 1 foot wide and of an assay value of 11 dwts. 7 grains of gold per ton. The rise in the back of this level has been advanced 5 feet 3 inches, or 8 feet 3 inches above the level. The quartz is 2 feet wide but assays only 2 dwts. 7 grains of gold per ton. I am hoping this will soon very much improve both in size and quality. The 420 shaft has been advanced 12 feet, or 77 feet 9 inches from the shaft. The lode continues of a kindly appearance. The midway level north has been extended 14 feet, or 97 feet 9 inches from the shaft. The quartz is 3 feet wide, and assays 13 dwts. of gold per ton. We have recently started at about 75 feet from the shaft to sink a winze in the bottom of this level; it is now down 3 feet. It produces quartz of 2 feet wide and of an assay value of 5 dwts. 2 grains of gold per ton. A part of this lode is evidently standing to the west of the present level, but to what extent we cannot yet say; we have, however,

decided to drive back south (from opposite the above winze) to test its value, and have advanced the level 8 feet on its course. It yields quartz of 3 feet wide, and of an assay value of about 5 dwts. of gold per ton. Two stopes in the bottom of the mid level yield quartz of from 3 feet wide, and assay on an average 1 ounce 5 dwts. 4 grains per ton. The 350 level north has been driven 12 feet 3 inches, or 239 feet 9 inches from the shaft. This end is still in dyke. The stopes in the bottom of this level produce quartz of from 1 to 2 feet wide, and assay on an average 8 dwts. 5 grains per ton. A stope in the back of this level yields quartz of about 1 foot wide, and assays 19 dwts. 7 grains of gold per ton. The stopes in the bottom of the 350 level south yield quartz of from 2 to 3 feet wide, but the value is somewhat improved, it now being worth 4 dwts. of gold per ton.—Surface. The general work is being pushed forward satisfactorily.

BRILLIANT BLOCK GOLD.—Mining manager's report for fortnight ending November 14: Underlie shaft sunk 10 feet, or 86 feet below No. 6 level. Reef 7 feet thick on east side and 2½ feet thick on west, say 15 dwts. stone. 6 level west driven 18 feet, total from shaft 176 feet. Reef in stopes 1 to 2 feet, say 10 dwts. stone. 6 level east driven 21 feet, total from shaft 193 feet. Reef 2½ feet, say 17 dwts. stone. Reef in stopes 2 to 3 feet thick, 10 to 18 dwts. stone. 5 level west driven 18 feet, total from shaft 370 feet. Reef 1½ foot to 18 inches thick, of 10 to 16 dwts. stone.—5 level east. Two stopes on H. W. reef. Reef 2½ feet, 25 dwts. stone. Six stopes on F. W. reef 1 to 3 feet thick, of say once stone.—4 level west. One stope, 1½ foot reef, 15 to 20 dwts. stone.—4 level east. Two stopes on H. W. reef. In one reef is 10 inches thick, of 1½ dwt. stone. In the other 1 to 2 feet of 15 dwts. stone. Stone raised, 1300 tons.

DON PEDRO.—Maquiné Mine half-monthly report, December 15: Operations for this part of the month have been carried on in sinking the shaft as fast as force will allow, the ground being still hard for excavating. We have now completed 7 fathoms under the 60. After another fathom sinking we shall fix another lift to enable us to reach the 75 fathom horizon.—Gold raising. This is still limited to a small force owing to the scarcity of labour. Places of operation for this part of the month have been confined to the driving of the 50 north, where the lode is large, but of low quality. The incline west has been pushed forward. The lode is large and of fair quality, but the line of gold still continues small and of low quality boxwork, but seeing the large amount of mineral standing in this direction, it leads us to expect that the line of gold will again become its usual quality and size.—Incline east. This has been continued on the dip of the lode, which is very large and of very fair quality, but the line of gold at present is of low quality boxwork, therefore, it is now extracted with the general work. Before the end of the month we hope to make a communication here with the incline rise from the 60 north. This will lay open a very large section of stopping ground from the 50 to the 60 on this part of the mine. The rise from the 60 has been continued very satisfactorily in a very fair lode. As soon as the communication is made with the 50 the force from the rise will be put to drive south from the 60 east to intersect the No. 1 line of gold in the southern extremity of the No. 8 shoot, also to lay open that part of the mine for stopping operations. Therefore we consider that the mine is opening very satisfactorily, and better results may be expected in the coming year.—Reduction department: All work in connection with the treatment of mineral has been carried on very satisfactorily. The amalgamation plates are answering remarkably well. No trace of gold is seen in the tail sand leaving the wash-house.—Morro Sta. Anna. The drive from Bawden's shoot has been continued. From the top lode, which is soft, shows splendid samples of free gold as good as the average general work of the Maquiné Mine.

FRONTINO AND BOLIVIA.—Mr. Eastice's report on the mines: La Salada, November 22: El Silencio. The shaft sinking has again resumed its active working. In the first part of the month there were several interruptions, and on Sunday last there was a breakage which caused the stoppage of the work in the bottom of the mine for three full days. The No. 6 level north having continued in a very disordered mineralised rock, has been temporarily suspended. The south end maintains much the same size and value, but split up into branches. This feature is not at all uncommon, and in a few feet of drive will most likely disappear. No. 5 level north and south improved.—No. 4 level north. This I mentioned a month ago as having been suspended, but a branch in the hanging wall was driven on, and finally opened out into a well-defined lode. Several exploration works had been made at this point, as the lode had been entirely cut off its strike by a crossing. This level south there is nothing particular to notice. In the drive of the Bolivia crosscut a formation very like some lode has been met with, but as at the time of examination it was just cut into, it is premature to give an opinion of what it may be. I hope to be able to say more of this in about a month hence. The ground, too, has become more favourable for driving, and it can be hoped that good advances will be made, provided the air does not become bad. The stopes in the mine have improved, especially in the south ground, and the bottom of the mine southward is much better, the lode richer and wider than it has been for some time past. One very favourable feature is that it appears to continue in depth, and is near the shaft; therefore, after the crosscut from the No. 7 or 500 feet level has intersected the lode, it is more than probable that there will be rich ground for a long distance southward. The No. 7 crosscut will be started in the present month.—La Salada. The work at this mine has been delayed considerably, still the shaft has been sunk 5½ feet, and the No. 2 crosscut driven 8 feet. The ground is exceedingly hard and difficult to break, and consequently considerable time is spent with apparently little work done. It can be hoped that sinking and driving of the shaft and crosscut will go on more steadily as the dry season has set in. The work on the flat lode has again been resumed, and the points seem to show a slight improvement generally. The drives are much the same. The No. 6 north is a little larger, and the quality of the mineral only fair. The stopes above the No. 4 level, mentioned in my letter of October 23, are gradually terminating, and we are, therefore, for the present obliged to break more mineral from the flat lode than heretofore. I see no alternative until the lode is intersected in the No. 2 crosscut. These circumstances are unfortunate, especially at the present time, and the bad state of the old mills adds to them. Only a very small quantity of ore can be milled, and that very badly, but the expense of making any repairs to these old mills would be a waste.—Cordoba. By the tabulated report you will observe that an excellent advance has been made in No. 8 crosscut, and within another month the lode should be intersected, if an equal proportion in the drive can be made. In the No. 7 level north the lode, although small, is promising, and is producing a fair quality mineral: this level south is in poor ground. The stopes have fallen back slightly in quantity and quality.—Tigrito. The No. 6 crosscut has been continued with the object of intersecting a lode, or at least what appears to be one, it having a strike parallel with the Tigrito lode. As the ground was fair for driving, advancing with the crosscut was considered a better test as to the continuance of this lode in depth, its size, quality, and general characteristics, and should it prove to be worth working, it will be a valuable adjunct to the Tigrito Mine. It is intact to the surface, beyond a few pits scattered here and there along its outcroppings. The drive west has opened up better mineral, and the advances made in the rises are such, that soon there will be adequate stopping ground for a choice of mineral. On the whole, the mine is in a very promising condition, and will be producing a good monthly yield within a very short period.—Marmajito. The No. 2 crosscut is being continued, and the advance made is slow, the ground being exceedingly hard. The lode appears to have improved slightly, as has also the mineral extracted from the rise in the back of the level west. Other points are much the same; however, enough mineral is now extracted to keep the mill at work full time.—Marmajito. The deep level crosscut progresses slowly, mainly through the hardness of the rock it is driven in. This drive is of no particular importance, and the number of men has been reduced in consequence. However, these are put on a crosscut further west and above the deep level crosscut, with the object of cutting some mineral at that point.—La Salada, December 7: There is very little change in any of the

mines since my last letter. However, at the time of writing, some of the diaries from the mill have increased, and the amount of gold produced since the end of the last "mill month," is in excess of that of the same date in last month, and unless some accident occurs, the probability is that the produce will equal the past month.—Silencio. Owing to stoppages of the Pocuné water, for repairs to flumes, changing these, and the course of the stream, in places where new excavations have been made, there has been an unavoidable influx of water in the shaft and No. 6 levels, and although these changes were made with the greatest possible speed, the accumulated water in the mine was not drained until some days afterwards. This has, therefore, impeded the sinking of the shaft, and to some extent the work in No. 6 levels. Work has been resumed in the No. 6 levels, and the lode in the end and in stopes above maintains its quality. No. 5 levels are much the same. No. 4 north has improved, but south no change has occurred. The ground in the Bolivia crosscut is still more favourable for driving, and is advancing very fairly. Other points remain without any perceptible change, and the yield of mineral and bullion is very fair.—La Salada. The stoppage of the Pocuné water had, of course, the same effect at this mine as at El Silencio, added to which the mills were idle also. All work, however, is at present again in its usual active state, except the shaft sinking, which is being hindered by the placing of new timbers, &c., for the better accommodation of driving the crosscut No. 2. The mineral from the stopes is much the same in quality, and all other points show no change.—Cordoba. The lode in the No. 7 end north has opened up, and is now about 18 inches thick of fairly good mineral. The stopes are much the same, and the crushings show an increase compared with this date last month. The No. 8 crosscut advances rapidly, the work having assumed a very interesting feature, as that soon the intersection of the lode is expected.—Tigrito. As the drive west advances the lode widens and is of better quality, which, to judge from the lode worked in No. 5 and above it, foreshadows a good future. The stopes remain much the same, and producing sufficient mineral to keep the mill running full time.—Marmajito and Marmajon. At the former mine the lode in the level in No. 2 crosscut is a little larger, but still encased between hard walls, and is difficult to break in consequence. At the latter the crosscut is driven tardily, there being nothing important to expect, besides some new works above are commenced to verify the rather doubtful distance which is thought must be driven to intersect mineral.—New work. The new watercourse at Tias is advancing rapidly, the foundations of new boiler and hoisting engines are almost finished, and will be waiting for the parts of the new machinery. The framework for the La Salada new mill is being done slowly. New wheel at work at Maria Dama mill will soon be finished.—General. The mines throughout are looking well, and the yields from the mills up to date show fair for a good month for December. The prospects, too, for the future I consider are very satisfactory, as almost at once the Cordoba lode will be intersected; the mine at Tigrito improves as it is being opened. The Marmajito is also improving. There is almost a certainty of having rich ground when the lode is cut by the No. 2 crosscut at La Salada, and El Silencio is rich, and seems to bid fair to continue so. Of course, some time will elapse before all the points mentioned are developed and proved, but I consider the present state of things, and the preparations now in hand, kept pace with the designs already laid out, will in a short time put the mines in a better position than they have ever been.—Geo. W. Eastice.

GRAT SOUTHERN TIN AND GOLD FIELDS.—The mining manager reports: Toora, December 8: The length driven for the two weeks is 13 feet. The men have been down with a mild attack of influenza, not sufficient to stop work, but they have not worked with their usual vigour. This will account for the slight diminution in the general average done hitherto.

HARRIETVILLE.—Fortnightly report of Mr. T. G. Davey, dated December 7. Mons Meg Mine. Drive south of winze 100 feet below tunnel D advanced 6 feet, total 155 feet. Lode much disordered and barren. Commenced to crosscut west from this drive.—Stopes: Underhand stope on main shoot below D lode 7 feet wide, assaying 3 dwts. per ton. Lode in stope at back of drive south of tunnel D 12 feet wide assaying 4 dwts. per ton. Stope under 240 feet level below J lode 2 feet wide assaying 6 dwts. per ton. Lode 2 feet wide, assaying 18 dwts. per ton. Underhand stope south of J lode 18 inches wide, assaying 1 ounce 15 dwts. per ton.—St. Bernard Mine. Drive south of lower tunnel on United Miners lode advanced 10 feet. Lode small, but carrying colours of gold. This is an encouraging feature. Upper tunnel near rich vein advanced 35 feet, total 42 feet north of Pennsylvania shaft. Lode fairly well defined and prospecting from 5 dwts. to the ounce of gold per ton.—Surface. In the tunnel on Redpath's lode east of the Guerdon. The auriferous vein has risen to the back of drive, and is evidently dipping north. We are about to sink on this vein.

HARMONY GOLD AND LAND.—The following is an extract from the manager's letter of December 20: There is now much more work going on along the Marchison range. The Mila's Syndicate is busy erecting a 10-stamp battery. The Gravelotte has another 20 or 30 heads on the road I hear. Moorestrops has a five stamp battery on the way from Delagoa Bay, and Block B is still crumpling at the President reef and getting about 1½ ounce to the ton of rock. Besides these there is a small prospecting battery at work at W. T. konjes, turning out 2½ ounces to the ton. The Sutherland Reef are still erecting machinery.

MILLS' DAY DAWN UNITED.—Mining manager's report, fortnight ending November 19: No. 9 level west extended and timbered 12 feet, total from plat 17 feet. No. 9 level east extended 5 feet, total from plat 10 feet. No. 8 west hanging wall crosscut extended 10 feet, total from level 48 feet, on 3 feet 6 inches of medium quality stone. Stopes average 3 feet 6 inches of fair quality stone.—No. 8 level west. No. 1 winze has been sunk 28 feet, total from level 39 feet. No sign of reef yet. No. 8 level west main reef extended and timbered 13 feet, total 108 feet. Stopes average 5 feet of heavy mineral stone.—No. 7 level west. No. 5 winze sunk 11 feet, total 93 feet showing about 18 inches of fair stone. Stopes average 4 feet of mineral stone on the main reef, and on the flat at 3 feet. Hanging wall stope averages 3 feet of fair quality stone.—No. 6 west main reef. The stopes average 3 feet of heavy mineral stone.—No. 5 level west. No. 1 footwall crosscut east drive extended and timbered 31 feet, carrying 2 feet of fair quality stone. Footwall stope average 3 feet heavy mineral stone. Stopes on main reef from 2 to 3 feet thick of good stone.—No. 5 level east. No. 2 footwall crosscut extended 21 feet, total 71 feet.—No. 4 level east. No. 3 footwall crosscut extended 23 feet.—No. 3 level east. We are stopping on 1 foot of fair stone. Stone raised, 2000 tons.

MOSMAN.—Manager's report for November 21: North Australian Mine, Beverley level. North stopes are looking well. Reef 2 to 18 inches of heavy mineral stone. Underhand stope not so well mineralised.—Byerley level. South stopes no change. Reef 15 inches, rather white.—Wyndham mine. No. 9 level south. Stopes looking better, 4 to 10 inches well mineralised stone.—No. 11 level south. No change. Reef 12 inches, fairly mineralised.—No. 12 level north. 4 to 10 inches of stone, not so good as usual.—No. 13 level south. No change. Reef 6 to 10 inches, well mineralised. No. 13 level north driven 17 feet. Total from shaft 268 feet. Reef 10 inches thick; has just made, carrying a little mineral.

MYSORE REEFS (Kangundy).—Fortnightly report of Captain M. Scantlebury, dated December 26: Underlie shaft. The 325 feet level north has been extended 23 feet 6 inches, now 66 feet 6 inches from shaft. The lode in the present end is 3 feet wide, composed of quartz, arsenical pyrites, and hornblende schist, assaying 4 dwts. 13 grains of gold to the ton. Winze below 325 feet level north has been sunk 9 feet 6 inches, now 9 feet 6 inches below the level. The quartz is 14 inches wide, assaying 1 ounce 12 dwts. 16 grains of gold to the ton. Rise above 325 feet level north has been put up 9 feet 3 inches above the level. The quartz is 15 inches wide, assaying 1 ounce 21 grains of gold to the ton. Winze below 250 feet level north has been sunk 8 feet, now 10 feet below the level. The quartz is 1 foot 3 inches wide, assaying 18 dwts. 6 grains of gold to the ton.—Vertical shaft. The crosscut east at the 280 feet level has been advanced 15 feet 6 inches, now 22 feet 6 inches from shaft. In two or three days more we shall intersect the lode.

MOUNT LYELL.—The London office has received the following report from the Melbourne board—viz., for the week ending November 29: Indicator winze, No. 3 tunnel. The winze has been sunk 2 feet 6 inches, total 39 feet 6 inches. The sinking is a copper pyrites of good grade. The auriferous clay vein continues down.—Rise over old ore winze, No. 4 tunnel. The rise has been put up 5 feet, total 84 feet. The ground is tighter and required an occasional shot to loosen it. Another 16 or 17 feet of rising will hole through to the south drive, No. 3 tunnel.—South drive, 50 feet level engine shaft, No. 4 tunnel. This drive has been driven 5 feet, total 239 feet. The pyrites wall has made a turn to the right, otherwise there is no change to report.—North drive, 50 feet level engine shaft, No. 4 tunnel. Work was resumed yesterday in this drive, which is now being driven by contract.—No. 2 crosscut, 75 feet level engine shaft, No. 4 tunnel. Work in the stopes has been continued as usual. The vein of rich ore in some of the faces has been mixed with lower grade ore, and requires picking.—No. 1 winze, No. 4 crosscut, 75 feet level engine shaft, No. 4 tunnel. The winze has been sunk 3 feet, total 6 feet. A start has been made to underhand stopes the ore, which appears to be underlying very fast now to the west. For the first 18 inches the ore was rich and clean, behind that an intrusion of barytonous rock has come in, but what thickness there may be of this cannot be ascertained for a day or two.—North drive, 100 feet level engine shaft, No. 4 tunnel. The north drive has been advanced 2 feet 6 inches, total 66 feet 6 inches. The country continues extremely hard, making progress very tedious.—No. 5 tunnel. The contractors have driven 6 feet, total 911 feet, leaving about 2 feet to complete their contract. The country is hard conglomerate and sandstone lying in narrow bands.—Ore raised, 193 bags weighing 12 tons 7 cwt, 2 quarters, containing silver, 10,122 ounces; copper, 2 tons 15 cwt, and 4 lbs.

MOUNT ZEEHAN (Tasmania).—Manager reports for week ended November 30: Argent Section. Main engine shaft, No. 6 lode, No. 1 level, No. 3 rise. Stope continued, but ore kept below, mill being engaged crushing for Zeehan-Montana Company. Lode 2 feet 6 inches wide, medium quality.—No. 4 lode, No. 1 level, No. 2 winze sunk 6 feet, total 12 feet. Lode 9 inches wide, good quality second.—Silver Queen Section. New shaft sunk 13 feet, total 47 feet. Water having considerably increased, and we cannot do any further sinking until this has been drained off a little. Meantime will sink a winze on the lode, which will eventually be useful for ventilation. Concentrator has been run 72 hours on Zeehan-Montana Company's ore, and milled 267 tons seconds for 26 tons concentrates, containing about 20 tons lead and 2728 ounces silver.

MYSOORE GOLD.—R. Hancock, December 26: Mining operations for the fortnight ending December 24: Rowse's shaft, 1480 feet level north of winze. We resumed the driving of this end on the 18th inst. Driven 7 feet, making a total distance driven of 63 feet. The lode is 1 foot wide, assaying 3 dwts, 22 grains.—1460 feet level south of winze. This end has been driven 12 feet, making a total distance of 124 feet. The lode is 3 feet wide, assaying 10 dwts.—1360 feet level south of crosscut. There are two stopes in the back of this level. The average width of the lode being 1 foot 9 inches, giving an average assay of 6 dwts, 12 grains.—1360 feet level north of winze. The lode in the stopes in the back of this level is 2 feet wide, assaying 14 dwts, 8 grains.—1260 feet level north. There are four stopes in the back of this level. The average width of the lode being 5 feet 4 inches, giving an average assay of 1 ounce 10 dwts, 10 grains.—1260 feet level south. The winze in the bottom of this level has been sunk 19 feet, making a total depth of 94 feet. The lode is 1 foot wide, assaying 1 ounce 19 dwts, 4 grains. The rise in the back of this level has been put up 19 feet, making a total height of 29 feet. The lode is 2 feet 6 inches wide, assaying 1 ounce 0 dwts, 21 grains. There are four stopes in the back of this level. The average width of the lode being 3 feet 9 inches, giving an average assay of 1 ounce 9 dwts, 22 grains.—1160 feet level north. There are seven stopes in this level. The average width of the lode being 1 foot 6 inches, giving an average assay of 1 ounce 6 dwts.—1160 feet level south. This end has been driven 24 feet, making a total distance driven of 239 feet 6 inches. The lode is 1 foot wide, assaying 3 ounces. The lode in the stopes in the bottom of this level is 2 feet wide, no assay made.—1060 feet level north east. This end has been driven 18 feet, making a total distance driven of 530 feet.—990 feet level north. We have a pair of men engaged stripping down side in the back of this level, in which the lode is 1 foot wide, assaying 16 dwts, 23 grains.—890 feet level north. The lode in the stopes in the back of this level is 3 feet wide, assaying 14 dwts.—890 feet level north of crosscut. This end has been driven 19 feet, making a total distance driven of 128 feet 6 inches. The lode is 4 feet wide, assaying 1 ounce 12 dwts, 16 grains. The lode in the stopes in the back of this level is 4 feet wide, assaying 1 ounce 12 dwts, 16 grains.—890 feet level south. The driving of this end was resumed on the 11th instant. Driven 16 feet, making a total distance driven of 134 feet. The lode is 6 inches wide, no assay made.—780 feet level north. The lode in the stopes in the back of this level is 2 feet wide, assaying 13 dwts, 1 grain.—780 feet level north on new chute. This end has been driven 17 feet, making a total distance driven of 221 feet. The lode is 3 feet wide, assaying 1 ounce 13 dwts, 6 grains. The rise in the back of this level has been put up 10 feet, making a total height of 73 feet. The lode is 1 foot wide, assaying 1 ounce 18 dwts, 6 grains. The lode in the stopes in the back of this level is 3 feet wide, assaying 2 ounces 19 dwts, 2 grains.—620 feet level north of crosscut. This end has been driven 2 feet 6 inches, making a total distance driven of 291 feet 6 inches. The lode is 6 inches wide, no assay made. There are three stopes in the back of this level, the average width of the lode being 3 feet 6 inches, giving an average assay of 3 dwts, 11 grains.—620 feet level south of crosscut. The lode in the stopes in the back of this level is 1 foot 6 inches wide, assaying 16 dwts, 23 grains.—Crocker's shaft. This shaft has been sunk 7 feet below the 620 feet level. The lode is 2 feet wide, assaying 13 dwts, 1 grain. During the first part of the fortnight the machine was engaged stripping down the footwall above the 620 feet level.—400 feet level north. There are five stopes in the back of this level, the average width of the lode being 4 feet 1 inch, giving an average assay of 10 dwts, 6 grains.—296 feet level north. There are three stopes in the back of this level, the average width of the lode being 1 foot 10 inches, giving an average assay of 1 ounce 6 dwts, 20 grains.—236 feet level north. There are four stopes in the back of this level, the average width of the lode being 1 foot 6 inches, giving an average assay of 1 ounce 8 dwts, 9 grains.—Taylor's shaft, 466 feet level north. The lode in the stopes in the back of this level is 3 feet wide, assaying 7 dwts, 19 grains.—Gilbert's shaft, 520 feet level north. The lode in the stopes in the back of this level is 2 feet 3 inches wide, assaying 1 ounce 0 dwts, 21 grains.—520 feet level south. The lode in the stopes in the back of this level is 2 feet wide, assaying 7 dwts, 3 grains.—430 feet level north. There are two stopes in the back of this level, the average width of the lode being 1 foot 9 inches, giving an average assay of 1 ounce 10 dwts, 20 grains.—360 feet level north. The lode in the stopes in the bottom of this level is 1 foot 8 inches wide, assaying 15 dwts, 15 grains.—290 feet level north. There are three stopes in this level, the average width of the lode being 3 feet 8 inches, giving an average assay of 18 dwts, 20 grains.—180 feet level south. There are three stopes in the back of this level, the average width of the lode being 3 feet 6 inches, giving an average assay of 1 ounce 17 dwts, 6 grains.—Tennant's shaft. This shaft has been sunk 8 feet 6 inches, making a total depth of 81 feet 2 inches below the 600 feet level. There is a branch of quartz 7 inches wide, which assays 2 dwts, 14 grains.—520 feet level north. There are two stopes in the bottom of this level, the average width of the lode being 2 feet 9 inches, giving an average assay of 9 dwts, 2 grains.—290 feet level south, north of crosscut. The lode in the stopes in the bottom of this level is 1 foot 8 inches wide, assaying 10 dwts, 10 grains.—Sohaw's shaft, 450 feet level north. The crosscut east in this level has been driven 6 inches, making a total distance driven of 45 feet 3 inches. We have suspended the driving, and have put the men to stopes in the back of the 390 feet level south of McTaggart's shaft. There are two stopes in the back of this level, the average width of the lode being 1 foot 7 inches, giving an average assay of 15 dwts, 20 grains.—450 feet level north, south of crosscut. The winze in the bottom of his level has been sunk 8 feet, making a total depth of 125 feet

6 inches. The lode is 1 foot 3 inches wide, assaying 4 dwts, 13 grains. There are four stopes in the back of this level, the average width of the lode being 2 feet, giving an average assay of 15 dwts, 2 grains.—McTaggart's shaft. This shaft has been sunk 6 feet 6 inches, making a total depth of 43 feet below the 550. There is nothing here to report. We have started a crosscut west from the shaft at the 550, which has been driven 8 feet.—450 feet level south. The lode in the stopes in the back of this level is 1 foot 3 inches wide, assaying 3 dwts, 22 grains.—320 feet level north. The lode in the stopes in the back of this level is 1 foot wide, assaying 1 ounce 6 dwts, 3 grains.—320 feet level south. The lode in the stopes in the back of this level is 1 foot 6 inches wide, assaying 13 dwts, 1 grain.—Glen shaft, 250 feet level north, crosscut west. This has been driven 10 feet, making a total distance driven of 209 feet.—Crosscut east. This has been driven 2 feet 10 inches, making a total distance driven of 284 feet 6 inches.—Riddell's shaft. This shaft has been sunk 11 feet 6 inches, making a total depth of 493 feet. The sinking has been hindered by water.—1060 rise. This has been put up 3 feet 6 inches, making a total height of 73 feet 6 inches.—William's shaft, crosscut west from the 173. This has been driven 2 feet, making a total distance driven of 93 feet 6 inches.—Health good.

NINE REEFS.—Fortnightly report of Captain John Woolcock, dated December 26: Vyvyan's shaft 220 feet level. In the No. 2 stope working in the back of this level to the south of shaft there is no change to notice with regard to the size or value of the lode since my report of the 12th instant. The lode formation is 4½ feet wide, and the quartz leader varies from 4 to 8 inches wide. This at times shows visible gold freely, and some of our pan washings are very good indeed. A sample broken from the leader yesterday gave by assay 1 ounce 6 dwts, 2 grains of gold per ton. The lode in the No. 3 stope to the north of the footway winze is from 4½ to 5 feet wide, carrying two small leaders. The one against the hanging wall is from 4 to 5 inches wide, producing a fair amount of pyrites, but very little free gold. The leader against the footwall is about 6 inches wide, and worth by assay 15 dwts, 8 grains of gold per ton. The lode matter between these two leaders is barren rock. The stope in the bottom of this level to the south of shaft is being worked for a length of 40 feet. The lode is from 2½ to 3 feet wide, and the quartz leader varies from 8 to 15 inches wide, and this by assay is worth 1 ounce 17 dwts, 8 grains of gold per ton.—The 145 feet level. In the stope working in the back of this level at the 172 feet south from shaft the lode is 4 feet wide, the quartz portion being from 10 inches to 1 foot wide, which is worth by assay 14 dwts, 12 grains of gold per ton. We are rising and stoping to the south of the before-mentioned stope, where the quartz leader varies from 6 to 10 inches, and worth by assay 17 dwts, 8 grains of gold per ton. These stopes are being worked by hand labour, and as the ground is hard our rate of progress is rather slow, but I am hoping we shall open out a profitable section of stoping ground in the back of this level.—South shaft. This shaft has been sunk a further 8 feet, total depth from surface 195 feet 9 inches, and below 145 feet level 50 feet 9 inches. The last 4 feet the lode has improved in appearance and is carrying more quartz which is making in small branches and veins in the lode, and the quartz from some of these shows visible gold. The indications at present are most favourable, and I am hoping it will very soon further improve. The lode is 5½ feet wide, and a sample broken from the quartz portion yesterday gave by assay 4 dwts, 2 grains of gold per ton. The 145 feet level north has been advanced 8 feet 9 inches, total distance from shaft 144 feet, the lode is 4½ feet wide of a discorded nature composed principally of schist, with small veins and stringers of quartz intermixed, but the ore at present is of low quality. I have stopped the driving for a time and put these men to sink a winze at 100 feet to the north of shaft, and hope to get it to the required depth by the time our next level reaches this point. This will open up a section of ground, and also ventilate the bottom of the mine.—Prospecting. McTaggart's lode No. 1 shaft. The level north from this shaft has been driven 4 feet 7 inches, making a total distance of 38 feet. The lode is 18 inches wide, composed of a soft leafy schist, and a little quartz, the whole of which is highly stained with oxide of iron, and worth by assay 1 dwt, 8 grains of gold per ton. In the south level we are cross-cutting west to see if any other part is standing in that direction. The crosscut has been driven 12 feet 10 inches, but so far have not discovered anything to notice. The No. 5 shaft has been further deepened 3 feet 6 inches, total from surface 96 feet. The lode here is very narrow and of no value, and the ground continues very hard, so our progress by hand labour is slow in consequence.—Surface. I am pleased to say the mill is working most satisfactorily, and our results I think will be up to our calculation. The machinery throughout the mine is in good order and working well. There is nothing in our ordinary surface operations that calls for comment.—Health. I am pleased to say that the general health of the camp continues good.

NUNDYDROOG.—Thomas Richards, December 26: Report for the fortnight ending December 22: Taylor's shaft has been sunk 4 feet, total depth 83 feet below the 1080 feet level. Lode 1 foot 3 inches wide, assaying 6 dwts, 6 grains. The 840 south has been driven 13 feet, total distance 19 feet 6 inches. Lode 1 foot wide, assaying 12 dwts, 12 grains. The 840 south from crosscut east has been driven 5 feet, total distance 7 feet 6 inches. Lode 6 inches wide, of no value. In three stopes in the back of the 760 north the lode averages 3 feet 4 inches in width, and 13 dwts, 18 grains in assay value. The lode in the stopes in the bottom of the 680 north is 2 feet wide, and assays 11 dwts, 6 grains. The 600 north has been driven 13 feet, total distance 400 feet. Lode 1 foot wide, assaying 5 dwts. In two stopes in the back of this level the lode averages 2 feet 3 inches in width, and 1 ounce 6 dwts, 16 grains in assay value. There are three stopes in the bottom of the 520 north. The lode averages 2 feet 2 inches in width, and 14 dwts, 14 grains in assay value. The lode in the stopes in the bottom of the 370 north is 1 foot wide, assaying 8 dwts, 18 grains. In the 300 north in stoping the footwall preparatory to driving there is a branch of quartz 6 inches wide, which assays 3 dwts, 13 grains. Main shaft has been sunk 3 feet, total depth 20 feet below the 1000 feet level. Lode 1 foot 6 inches wide, assaying 6 dwts, 6 grains. The 1000 north rise has been put up 8 feet 6 inches, total height 63 feet 6 inches. Lode 2 feet wide, assaying 2 ounces 16 dwts, 6 grains. The 920 north has been driven 21 feet, total distance 150 feet. Lode 4 feet wide, assaying 5 dwts. In the stopes in the back of the 920 south the lode is 4 feet wide, and assays 1 ounce 2 dwts, 12 grains. The 680 north has been driven 12 feet 6 inches, total distance 340 feet. Lode 1 foot wide, assaying 3 dwts, 18 grains. Crosscut east from the 680 north has been extended 10 feet, total distance 213 feet 6 inches. No change. Kennedy's shaft has been sunk 5 feet, total depth 80 feet below the 520 feet level. The 520 south has been driven 18 feet, total distance 346 feet. Lode 2 feet 6 inches wide, assaying 3 dwts, 18 grains. The 520 north has been driven 22 feet 6 inches, total distance 349 feet. Lode 3 feet 6 inches wide, assaying 10 dwts. The 440 south has been driven 27 feet, total distance 698 feet. Lode 1 foot 6 inches wide, assaying 2 dwts, 12 grains. The rise in the back of this level has been put up 49 feet 6 inches, total height 70 feet. Lode 2 feet wide, assaying 3 ounces. In the stopes in the back of this level the lode is 2 feet wide, and assays 1 ounce 17 dwts, 12 grains. The lode in the stopes in the back of the 440 north is 2 feet 6 inches wide, and assays 7 dwts, 12 grains. The 370 south has been driven 25 feet, total distance 478 feet. Lode 3 feet wide, assaying 1 ounce 6 dwts, 6 grains. The lode in the stopes in the bottom of the 370 north is 6 feet wide, and assays 1 ounce 2 dwts, 12 grains. In three stopes in the back of the 370 north the lode averages 3 feet 4 inches in width and 2 ounces 11 dwts, 16 grains in assay value. Crosscut west from the 370 north has been extended 24 feet 6 inches, total distance 190 feet. No change. The 300 south has been driven 23 feet 6 inches, total distance 276 feet 6 inches. Lode 6 inches wide, assaying 5 dwts. In the stopes in the back of this level the lode is 2 feet wide, and assays 10 dwts. In the 300 north rise and stope the lode is 1 foot 6 inches wide, and assays 7 dwts, 12 grains. The 230 north has been driven 21 feet, total distance 244 feet 6 inches. Lode 1 foot wide, assaying 3 dwts, 18 grains. The 160 north has been driven 3 feet 6 inches, total distance 131 feet 6 inches. Lode 6 inches wide, assaying 5 dwts.—Old mill samples. Rough quartz

through stonebreaker, 1 ounce 12 dwts, 12 grains; smalls, 1 ounce 15 dwts.—New mill samples. Rough quartz, 1 ounce 7 dwts, 12 grains; smalls, 1 ounce 15 dwts.

OURO PRETO.—Passagem Mine. In No. 2 shaft shoot pass fixed at 435 for transit of ore, and a stope started at this point between shafts. Lode on same opening out well. 435 end north east of No. 2 shaft continues full size in good looking lode. 400 end north east of No. 2 shaft also in good looking lode, and crosscut from this to winze from 365 nearly through, and expected to hole daily. 365 end north east and 315 north east kept on, but still in quartzite. 470 end north east of No. 1 shaft piercing sterile ground all the month.—No. 1 shaft. Clearing stuff and preparing to put down another jack head lift preparatory to resume sinking. 365 south west end continues in schist. In this level stoping has been commenced to place the men formerly in stopes in north east side of shaft in same level.—215 end north east. Full size in lode, and a stope on same level carries a large body of mineral with a floor of schist between.—No. 2 shaft. Fixing a jack head lift to force the water through the 435 level instead of the 400 level. Stopes from 400 level looking well both north east and south west.—435. Stopes from this level between shafts looking promising.—315 south west stopes. Inner stope looking well, but outward one not so good, being disturbed by floors of schist.—315 north east, No. 2 shaft. The lode in this stope continues good. That under the winze retains favourable characteristics.

SPITZKOP FARM.—The manager writes under date December 13 as follows:—I am sure you will understand without my saying so that several of the works we are at present engaged on may be said to be productive, although we cannot realise for the present, for instance, hydraulic sluicing, mine development, and reef stripping. We have nearly 2000 tons of quartz at grass, about 3000 developed ready for stoping out in the mine, and much more will be made available by stripping the reef, this will all be good when we can once get to work on ore reduction, and will give their return in due course.

BRITISH BROKEN HILL PROPRIETARY.—Mining manager's report for the week ending December 5: Blackwood (No. 1) shaft, 150 feet level. North drive off east crosscut extended 22 feet, total length 40 feet; face in mullock. South drive off east crosscut driven 19 feet, total length 35 feet; half of face in carbonate ore and half in mullock. We broke, in driving, 21 tons of ore, averaging 49 per cent. lead, and 5 ounces silver per ton.—Howell (No. 2) shaft, 300 feet level. North-east drive lengthened 6 feet, total length 88 feet; face still in hard sulphides, showing a little mullock.—Marsh (No. 6 shaft) 2nd level. No. 3 east crosscut driven 12 feet, total length 120 feet; face in hard country rock. Uprise in end of south drive off No. 3 east crosscut risen 2 feet, total height 16 feet; we have also been fossicking around on ore chutes around this uprise during the week. Ore is very patchy. We broke from this uprise 12 tons, averaging 30 per cent. lead and 34 ounces silver per ton.—Stoper. South stope off uprise in north drive looking fairly well at present. We broke 2 tons, average 27 per cent. lead and 62 ounces; 4 tons 23 per cent. lead and 53 ounces, and 12 tons 23 per cent. lead and 14 ounces silver per ton. North stope over back of main south drive getting patchy. We broke from this stope 2 tons, average 28 per cent. and 20 ounces, and 5 tons 23 per cent. lead and 14 ounces silver per ton. Stopes down winze unchanged. We have mined and sent to surface 57 tons, average 28 per cent. and 63 ounces; 23 tons 28 per cent. and 28 ounces; and 11 tons 23 per cent. lead and 14 ounces silver per ton.—Retailer's workings. East crosscut off north drive from winze driven 5 feet, total length 16 feet; face showing mullock. Are breaking fair grade carbonate ore from side of No. 2 north east drive on 115 feet level. We broke 11 tons, average 36 per cent. and 32 ounces, and 8 tons 23 per cent. lead and 14 ounces silver per ton. The week's assays vary from 11 to 54 per cent. lead and from 4.2 to 27.3 ounces silver per ton.

DARIEN GOLD.—The directors have received a letter from the mine captain that the junction between the engine shaft and the crosscut to the mines was completed on December 2. That the west end adit has been produced to a total of 138 feet, revealing the fact that the Spanish workings extended to this distance, leaving a rich orebody exposed. The No. 2 crosscut has been produced 14 feet 6 inches during the month, and has opened out a rich narrow streak of ore.

EAGLEHAWK CONSOLIDATED.—The following is an extract from the *Melbourne Age*, dated December 10: Cheering news is to hand from the Eaglehawk Consolidated Company. In the 820 feet level south and 38 feet from the crosscut there is a reef channel 28 feet wide, containing solid stone on the wall 1½ ft. in width, and widening out the further south it is being driven on, in which spots of metal of a very likely nature for gold are seen.

LION (Mozambique).—The manager, Mr. Nines, reports for the month of October, as follows:—Drive No. 1. Progress for the month 23 feet, total distance 182 feet. In the first reef there are doubtless rich shoots which can be sought after when the main reef is struck. The second reef is payable ore, where struck, panning ½ ounce gold to the ton. I am pushing on the drive with all speed to cut the main reef.—Drive No. 2. Progress for the month 38 feet, total distance 129 feet. Referring to the main reef which runs through the Lion property, Mr. Peffau states, "all the specimens I have seen tried, seemed to me to be rich, and I have verified the presence of visible gold in many fragments of quartz."

SUTHERLAND REEF.—Under date December 20, manager reports: West drive, 200 feet level, 15 feet have been driven, making a total of 166 feet. There is a great improvement in this drive since last report—a leader about 3 inches wide, in the hanging wall side, being rich indeed.—Winze, 210 feet level west. 9 feet have been sunk, making 48 feet in all. The reef is about 3½ feet wide, and very good in quality.—East drive, 210 feet level, 18 feet have been driven, making 141 feet. The reef here is 2½ feet wide. There is a streak in the centre of this drive, which is exceedingly rich, and which, as a picked sample, no doubt would go 50 ounces to the ton.—Battery. The engine and boilers will be completed by the end of this week, and we shall be able to get up steam if necessary.

A CO-OPERATIVE COLLIERY IN CUMBERLAND.—Mrs. Melrose, wife of the Vicar of the parish, on Tuesday cut the first sod at the shaft of a new colliery at Dearham, which she christened the Crossbow Colliery. Some months ago, when the Lonsdale Pit was closed, the people of the large and populous village of Dearham were left practically workless. The villagers attempted to float a company to continue working the coal deposits, and, being supported financially by some sympathising men of business in the district, were successful. The villagers invested their savings in the venture, and the local co-operative society advanced a thousand pounds, and as almost every worker at the pit will be a shareholder, it will be practically a co-operative colliery.

THE Lüthrig Coal and Ore Dressing Appliances (Limited) has secured contracts for coal washing plants for the Aokton Hall Colliery Company and the Denaby and Cadeby Main Colliery Company. The latter company already has a Lüthrig plant at work, the new plant being for their Cadeby Colliery.

FRANK JOHNSON AND COMPANY (LIMITED).—It is reported that the reef has been struck on the Caroline property at a depth of 60 feet, 3 feet wide, assaying 36 dwts.

TASMANIAN MINING RETURNS FOR 1894.—The value of the total yield, chiefly consisting of gold, silver, tin and copper, is £830,000, against £560,000 in 1893. The dividends paid amounted to £150,000, against £125,000.

"SAFE AS THE BANK OF ENGLAND."—The phrase is familiar enough, and in spite of recent criticisms of our great national institution, most of us would be perfectly content if all our private ventures were "as safe as the Bank of England." Well, then, you must look after your financial soundness as well as you can; and if you are not quite sound in health, take my advice. For all complaints of throat, chest, liver and stomach; for coughs, colds, influenza, bronchitis, and the like, you will find in Holloway's Pills and Ointment a cure "safe as the Bank of England." They are a sound investment, as proved by a trial extending to nearly 60 years.

PARIS LETTER.

British enterprise and French capital.—The "boom" in Rand mines.—The depreciation of gold.—Mining in Siam.

THE interest being taken in South African gold mining is no longer confined to that section of the public that merely looks upon the auriferous deposits of the Transvaal as an admirable source of investment. It is coming in for a great deal of attention at the hands of political economists, who consider that the development of gold mining in the Dark Continent is likely to exert a powerful influence upon the world's commerce and industry. During the past week two of the best-known authorities in France—M. Jacques Siegfried and M. Paul Leroy-Beaulieu—have expressed opinions highly favourable to South African gold mining. Their estimate of the country's future is, indeed, much in advance of the most brilliant anticipations yet put forth, so much so that one is inclined to entertain the fear that they have been carried away by enthusiasm in attributing to South Africa greater possibilities than may be open to it. However this may be, the confidence that has been growing in France—and which would have certainly resulted long ago in an active participation in the South African industry if its development had been due to other than British enterprise—is sure to be considerably strengthened by this glowing estimate of the country's auriferous resources, as in the present scarcity of investments elsewhere the public is inclined to attach a great deal of importance to the opinions of competent authorities in France. Notwithstanding that the public has been dealing very cautiously with South African scrip, it is encouraging to find that not less than eight millions sterling have been sent to London during the past six months for the purchase of these shares. This is a striking proof of the altered conditions under which business is done on the Paris Bourse. Until a little while ago the investor had had his suspicions as to the *bona fide* character of the majority of British concerns kept alive by the interference of committees and other bodies that were formed ostensibly to protect the interests of the investing public. So much money had been lost in French undertakings abroad, that, curiously enough, the feeling of suspicion thus evoked was directed to British enterprises, under the impression that the elastic company-promotion law in England allowed of a great many abuses being perpetrated. The investor would, consequently, have nothing to do with concerns unless they had a first-class reputation in London, and had secured a standing upon the Paris Bourse. As it is difficult at the present moment for British shares, other than those of the gilt-edged variety, to be quoted upon the Bourse, the field for investment is consequently limited, and as, moreover, the Paris brokers are increasing their charges upon the investors, these latter are showing a decided inclination to restrict their operations in Paris as much as possible. It is becoming more and more the tendency to send commissions to London brokers, and it is likely that a considerable business will be done shortly by French investors upon the Stock Exchange.

After the scepticism that has been entertained for so long a time regarding the value of the gold deposits in South Africa, it is only natural that investors should now veer round to a very sanguine estimate of the extent and richness of the Rand gold field, and that some extraordinary ideas should be expressed as to the amount of the precious metal to be extracted therefrom. The profits that are being made by the English companies, and the attention paid to the Transvaal by principal financial houses in Paris, prove to investors that the promises of the Rand companies were not over-stated, and they are now ready to throw themselves into South African undertakings with characteristic enthusiasm. It is recognised that the management of the Rand concerns could not be carried on in a more profitable manner than they are now. The public is showing its confidence by the way in which it is placing its money in British hands, with the conviction that the progress already attained in Rand mining will be surpassed by results in the early future. Even the most moderate estimate of M. Jacques Siegfried is that within a few years the annual production of gold on the Witwatersrand will be 40 millions sterling, while other authorities hold that it will be considerably more. With the prospect of such a development, both the small investor and the large capitalist are seeking to secure a footing in the South African mining market while there is yet time, and some of the financial enterprises with this end in view are being carried out upon a considerable scale. At the present moment a new concern is in course of formation for financing gold mining undertakings in South Africa. Its first capital of £400,000 is to be increased as may be required, and its influence will be seen from the fact that two of the principal concerns interested in the venture are the Banque Internationale de Paris and the Exploration de Londres. Now that so much capital is required for the working of auriferous deposits, not only in the Transvaal but also in the adjoining British territories, to say nothing of Western Australia and other countries, where enterprise in gold mining is sure to be re-awakened, this co-operation of French capital cannot fail to give a great stimulus to the industry.

In the opinion of M. Paul Leroy-Beaulieu, the splendid results that have attended the working of the Rand mines mark the commencement of a "new golden age." It is certain to see rapid extension of auriferous mining elsewhere, and the abundance of gold cannot fail to alter the conditions under which trade and industry are carried on. The point which French political economists are now considering is the course which this modifying influence is likely to take. As only a certain quantity of the precious metal can be absorbed for industrial purposes the increasing surplus will be available for the mint, so that the tendency is considered to be towards a complete demonetisation of silver and the substitution of a general gold standard. This result is expected to be attained when the United States finds it necessary to lead the way in a reform of its monetary system, by which a vast amount of gold would be absorbed. A little consideration would seem to show that this theory is established upon a faulty basis. For some time past, the discrepancy between gold and silver has been intensifying in consequence of the superabundance of the whole metal, but this does not prove that the connection between the two metals tends to disappear. An increase in the production of gold will merely result in a return to the old order of things, as an adjustment of the ratio will place the two metals on a workable basis. The solution of the economical problem lies not in an increase in the value of silver but in a judicious depreciation of gold. This is what is now taking place. But French economists see in this decline of the value of gold the possibility of auriferous mining being some day largely abandoned, owing to the absence of profit to be secured therefrom. Here, again, the theory seems to be untenable. It is never likely that sufficient gold will be produced to allow of the adoption of a universal gold standard—the amount of the precious metal required for this purpose would be incalculable; and while there is no inconvenient surplus of gold the metal will always maintain a value consistent with profitable mining,

and any decline of prices is sure to be accompanied by a corresponding economy in production.

The small body of capitalists who are interesting themselves in the new Watana Mine, are very confident of success, and anticipate that their property will prove to be one of the richest in the world. If the specimens now on view in Paris are to be taken as a criterion, the mine must be a marvel of wealth. It is not impossible, however, that it merely proves the existence of a solitary pocket, and capitalists are waiting with much interest the results of the prospecting that is now being carried on at the mine. The company for working the property was floated as a private concern, with a very small capital, and the shares, issued at 200 francs, are already quoted at 470 francs. Two other concerns are now in course of formation for acquiring mining property in Siam.

MINING NOTES FROM JOHANNESBURG.

By H. BUSH, M.E.

(Cabled Weekly).

Balmoral Mine.

The shaft being put down on this property has intersected the reef, a substantial head-gear has been erected, and exploration works to be proceeded with. Meanwhile, a reconstruction scheme on the following basis has been guaranteed by two or three of the houses:—Present capital £165,000; old shareholders receive one new share for seven old ones, £35,000 working capital offered to old shareholders *pro rata*; promoters have option of 40,000 shares at par, this leaving a capital for working expenses equal to £76,400. The prospects are excellent, and the mine is likely to open up well.

Knight's Tribute.

Vertical shaft south of the big dyke down 130 feet; expect the reef will be met with at a depth of 180 feet. It is expected that it will be very rich. Other portions well developed. Crushing will commence with 40 stamps on January 1. When the reef is struck in the vertical shaft and thoroughly proved, in addition to the 6 feet reef now being milled, which gives about 14 dwts., the owners intend putting this grand property on the market.

Knight's Witwatersrand.

A misunderstanding still exists on this board; but so keen is the competition for the control, that these shares are likely to be rushed to a very big figure. Rumour says that the Gold Fields are likely to become heavy buyers in the open market. It is also stated that Messrs. Lacey and Thompson, who are very large holders, are not likely to give up their influence unless very big prices are paid for the shares. The present success of this mine is entirely due to the interest displayed by Mr. Thompson. The new strike is opening up well.

Champ d'Or.

Twenty stamps only running this month; however, the output will be approximately the same. Profits will show considerable increase, and, with the additional 10 stamps added, there will be no difficulty in paying 20 per cent. quarterly, as I anticipate the profits will not be less than £10,000 monthly.

Wolhuters.

This extensive mine is opening up beyond all expectations, and when the new 50 stamps are in full swing the profits will be very considerable. The indebtedness will not exceed £40,000, which is a mere nothing. The air compressors and other machinery are far advanced in erection. Developments are equal to 110,000 tons, and by the time the new stamps start they will have at least 150,000 tons of ore in reserve.

May Consolidated.

The cyanide plant has been purchased from Messrs. Lacey and Thompson, and the output will show a considerable increase. The lower levels are opening up well, and the grade of ore is showing very considerable improvement. By May or June the output will reach the respectable figure of 5000 ounces monthly.

Metropolitan Mine.

This mine in the past has been one of the greatest failures on the Rand, and now under a good management it promises not only to be a great gold producer, but, in the near future, a dividend-payer. The work has been reduced more than 10s. per ton, and this is the great secret of this company's success, as this represents the profits that are now being made, and now that the claim owned by the Henry Nourse has been purchased, the eastern section will be opened up, and this is the richest part of the mine. It would not be surprising if the profits were to come nearly up to 20s. per ton.

Spes Bona.

The George Goch, which is working on the Spes Bona boundary, has struck the south reef very rich, assaying 3 ounces for 3 feet of ore. This assures the future prospects of the Spes Bona to be equal to that of the George Goch.

New Primrose.

Now that the extra 60 stamps have started running, dividends of about 60 per cent. per annum should be declared. The life of the mine is only about 16 years.

Glencairns.

In about four months' time the extra 30 stamps will be running, and profits of about 60 per cent. per annum should be earned with the 100 stamps.

Meyer and Charlton.

The total cost per ton for mining and milling is 26s., and will be considerably decreased by the time the 100 stamps are at work, and profits of £1 per ton are assured, which will give profits of 100 per cent. per annum.

Princess.

The present working expenses are 38s., and the ore has only a value of 34s. per ton, so it would be advisable to leave these shares alone until the property is placed on a better footing, which no doubt will be later on.

THE ORE SUPPLY FOR CLEVELAND STEELMAKING.—Messrs. C. E. Muller and Co., ore and iron merchants, of Middlesbrough, who are recognised authorities on the subject of foreign trade with Cleveland, in their last annual report state that the imports of foreign ores into this district show as follows:—

	1893.	1894.
Spain	1,884,139 tons	2,053,872 tons.
Italy	38,340 "	73,291 "
Sweden	35,601 "	76,676 "
Greece	33,630 "	39,690 "
Algeria	29,808 "	84,684 "
	2,021,516 tons	2,328,213 tons.

Imports of pure manganese ore were 23,770 tons, chiefly from the Caucasus and Chili.

ROBINSON GOLD MINING COMPANY (LIMITED).—The offices have been removed from 59, Holborn Viaduct, to 28, Austin Friars, E.C.

PROVINCIAL SHARE MARKETS.

THE CORNISH MINE SHARE MARKET.

M. R. SAMUEL JOHN DAVEY, Dealer in Cornish Mine Shares, Redruth, Cornwall, reports under date of January 17 (4 o'clock) as follows:—We have had a very quiet market all the week, but the tone on the whole is a little firmer to-day, although there is but next to nothing doing. Following are quotations:—Blue Hills, $\frac{1}{2}$ to $\frac{3}{4}$; Carn Brea, 2 to 2 $\frac{1}{2}$; Dolcoath, 37 to 39; East Pool, 3 to 3 $\frac{1}{2}$; Killifreth, 1 to 1 $\frac{1}{2}$; South Condarrow, $\frac{1}{2}$ to $\frac{3}{4}$; South Crofty, $\frac{1}{2}$ to $\frac{3}{4}$; South Wheal Frances, $\frac{1}{2}$ to $\frac{3}{4}$; Tincroft, $\frac{3}{4}$ to 4 $\frac{1}{2}$; West Frances, $\frac{1}{2}$ to $\frac{3}{4}$; West Kitty, 4 $\frac{1}{2}$ to 5; Wheal Agar, $\frac{1}{2}$ to $\frac{3}{4}$; Wheal Bassett, $\frac{1}{2}$ to $\frac{3}{4}$; Wheal Grenville, 11 to 11 $\frac{1}{2}$; Wheal Kitty (St. Agnes), $\frac{1}{2}$ to $\frac{3}{4}$; Polberro, $\frac{1}{2}$ to $\frac{3}{4}$.

Mr. MICHAEL WILLIAMS BAWDEN, Mining and Assaying Offices, Liskeard, Cornwall, writes (January 17) as follows:—The mining market presents a gloomy appearance, with almost an absence of business on the further depression on the tin standard, and low prices obtainable for the sale of ores being scarcely unprecedented. Closing prices:—Carn Brea, 2 $\frac{1}{2}$ to 2 $\frac{3}{4}$; Devon Consols, 1 $\frac{1}{2}$ to 1 $\frac{3}{4}$; Dolcoath, 36 to 36 $\frac{1}{2}$; East Pool, 3 $\frac{1}{2}$ to 4; Killifreth, 21s. to 22s. 6d.; Levant, 4 to 4 $\frac{1}{2}$; South Crofty, $\frac{1}{2}$ to $\frac{3}{4}$; Tincroft, 4 to 4 $\frac{1}{2}$; West Kitty, 4 $\frac{1}{2}$ to 4 $\frac{3}{4}$; Wheal Grenville, 11 $\frac{1}{2}$ to 11 $\frac{3}{4}$.

Messrs. ABBOTT AND WICKETT, Stock and Share Brokers and Mining Share Dealers, Redruth, write under date of Thursday, January 17:—Market rather better this week, in sympathy with tin. Dolcoath advanced $\frac{1}{2}$ to 38 $\frac{1}{2}$ –39. Tincroft, Polberro, and Wheal Bassett enquired for. Quotations herewith:—Blue Hills, $\frac{1}{2}$ to $\frac{3}{4}$; Carn Brea, 2 to 2 $\frac{1}{2}$; Dolcoath, 37 to 39; East Pool, 4 to 4 $\frac{1}{2}$; Killifreth, 1 to 1 $\frac{1}{2}$; Polberro, $\frac{1}{2}$ to $\frac{3}{4}$; South Condarrow, $\frac{1}{2}$ to $\frac{3}{4}$; South Crofty, $\frac{1}{2}$ to $\frac{3}{4}$; Tincroft, 4 to 4 $\frac{1}{2}$; West Frances, $\frac{1}{2}$ to $\frac{3}{4}$; West Kitty, 4 $\frac{1}{2}$ to 5; Wheal Agar, $\frac{1}{2}$ to $\frac{3}{4}$; Wheal Bassett, $\frac{1}{2}$ to $\frac{3}{4}$; Wheal Grenville, 11 to 11 $\frac{1}{2}$; Wheal Kitty, $\frac{1}{2}$ to $\frac{3}{4}$. Tin, £59 $\frac{1}{2}$.

MANCHESTER.

Messrs. JOSEPH R. and W. P. BAINES, Stock and Share Brokers, Queen's Chambers, 7, Market-street, write January 17th (noon):—The past week has, in some respects, provided a record, if not in price, in business done in a few concerns. Home rails have been most serviceable. Beginning with Friday last, home rails were a bit off, the dividend announcement on Sheffield Pref. conducting this turn. Other markets not very much altered, but what changes there were passed on the downward side, Saturday was an off-day, as was likely with carrying-over to begin on Monday. The account demanded a large amount of attention on Monday; for whilst it was the first account of the year and a 19-day account as well, a lot of business required adjusting. The day showed but few changes in home rails. Americans a little better. Grand Trunks and Mexican, no change worthy of record. Tuesday brought in a distinct change of tone, home rails being the feature of the day. They began first, but later the improvement spread to other markets, but still home rails held the field in extent of demand. A large business was done therein, and last prices were in nearly all cases the best of the day. Americans shared to a lesser extent in this movement, and Canadians were just about the same as the last-named coal and iron shares, which had previously been some little in demand were quieter, and Ebbw Vale were put lower on reported strikes. Yesterday there was some realising of profits going on, but the undertone was good and prices held up well, the realising notwithstanding, and several issues marked advances. In Americans, figures from the other side did not tend to improvement here, and as a consequence some little falling away was to be noted. This morning showed little, if any, change from last night's close, and as to-day we shall report later. Consols again return an advance, showing $\frac{1}{2}$ up on the week. Colonials but little altered.—Higher: New Zealand Inscribed $\frac{1}{2}$.—Lower: New South Wales Inscribed $\frac{1}{2}$, Victoria Inscribed $\frac{1}{2}$. Home corporation stocks, &c., are all better again where altered. The advances are mostly about $\frac{1}{2}$, but one or two issues are more than that—say from 1 to 2 per cent. Foreigners, notwithstanding the serious turn in French political affairs show an unbroken line of better prices. All classes of international stocks participate in the advance, and some of the improvements are more than fractional. The business in the Miscellaneous Market has come up to a very large amount—that is, as regards shares with regular quotations. Outside these a big business is reported, however. Of the quoted concerns Chartered of South Africa, Darien Mine A, and Ship Canal issues bear the palm for transactions. Prices are again on the upward side in majority for the general list.

BANKS.—Excepting Salfords, business straggling. Consolidateds are quoted 1-16 easier, but otherwise changes are all in favour of holders, Salfords being prominent with rise of $\frac{1}{2}$.

INSURANCE.—Hardly anything doing, but this appears to be more to strength on the side of holders, as, excepting very slight declines in Boiler Insurance and Positives (1-16 each), the changes, which are many, are all on the upward side.

COAL, IRON, &c.—A few dealings in Bolckows are all doing. Bolckow issues are better, but Ebbw Vales are $\frac{1}{2}$ to $\frac{3}{4}$ down, Tredegars are $\frac{1}{2}$ up on the A issue.

MINES.—Whilst but little is doing in the quoted lots here (except Dariens) a lot of transaction in shares listed elsewhere are reported. Darien A have had a good rise ($\frac{1}{2}$), and strong at the advance. Slight concessions are made in Consolidated Gold Fields, Ooregum Preference, and Tintos.

TELEGRAPHS, &c.—Western and Brazils quote $\frac{1}{2}$ down, but otherwise the few changes are on the better side.

BREWERIES.—Boddington's are put $\frac{1}{2}$ up, but on the other side we have Guinness's 2, Threlfalls $\frac{1}{2}$, and Chester's Ordinary $\frac{1}{2}$ down.

MISCELLANEOUS.—Salt Unions have come a little into favour, and they quote 3-16 to $\frac{1}{2}$ up. Manchester Carriage Company issue also are 3-16 to 5-16 better. United Alkali Ordinary, on the other hand, are 5-16 down. Manchester Ship Canals have been steady to firm, and Preference quote $\frac{1}{2}$ up; Suez Canal 1 up; Coats Ordinary are again better, $\frac{1}{2}$ to $\frac{3}{4}$.

LATER (4 P.M.).—The Home Rail Market received a good fillip from the Great Eastern dividend announcement (2 $\frac{1}{2}$ per cent., with 49,000 odd forward, against 1 $\frac{1}{2}$ and 44,000 odd forward last year). On this the whole market strengthened, and better prices ruled all round. Other than home rails have come in for advance. Mexicans First Preference showing rise of 2 $\frac{1}{2}$, and Americans and Canadians showed some firmer figures.

SCOTCH MINING AND INDUSTRIAL COMPANIES SHARE MARKETS.

STIRLING.—Mr. J. GRANT MACLEAN, Stockbroker and Ironbroker (January 17), writes:—During the past week the markets have been more active, notwithstanding the intervening fortnightly settlement is an exceptionally heavy one. The rates of continuation to new account, January 31, have been very moderate, and the feeling of confidence is, apparently, being diffused.

In shares of coal, iron, and steel companies prices are generally better. Ebbw Vale exceptionally lower as 7 $\frac{1}{2}$, on strike rumours, African Coal 5s. to 5s. 6d., Niddrie 45s., and Steel Company of Scotland 40s.

In shares of copper concerns there is little business doing, and prices of Tinto and Thariss are easier, probably owing to the ministerial crisis in France. German Elmore 3s. 6d. to 4s. 6d., Mason 34s.

In shares of gold and silver mines a large business has been done in South African Gold, Land, and Miscellaneous. Montana lower at 12s. The Frontino profit for December £4170 is again good. There has been more business doing in Charters Towers shares, including Bonnie Dundee, Day Dawn Block, and New Queen. The meeting of Mosman will be on January 21. Broken Hill Proprietary shares have been much quieter, and price easier at 34s. 6d., ex-div. African Gold Recovery have improved from 23s. 9d. to 26s., on judgment being given in the Transvaal Courts in their favour in

two cases for recovery of royalty. Sheba have improved from 28s. 6d. to 31s. 6d. on the anticipated large increase of stamping power. East Rand, May, and several others have been in favour with purchasers. Alexandra Estate, 7s.; Abbott's (W.A.), 17s. 6d. to 20s.; Balaghat, 5s.; Bechuanaland, 34s.; Buffelsdoorn, 67s. 6d.; Balkis Land, 5s. 9d.; Bayley's Reward, 13s. 6d.; Callas Bis, 2s. 6d.; Croesus, 47s. 6d.; Caratal, 1s. 6d.; Dickens Custer, 2s. 6d.; Don Pedro, 6s. 6d.; Frank Johnson, 21s.; Glencairn, 73s. 6d.; Graskop, 2s. 3d.; Holcomb, 2s. 1½d.; Johannesburg Investment, 55s.; Kanya Land, 2s. 6d. to 5s.; Liabon-Barlyn, 5s.; Louis d'Or, 3s. 9d.; La Plata, 2s. 9d.; Londonderry, 7s. prem.; Luipaard's Vlei, 17s. 3d.; Mallina, 18s. 3d.; Mysore Wyrand, 12s. 6d.; Mozambique, 27s.; Macate, 4s. 6d.; North Sheba, 4s. 6d. to 4s. 9d.; Otto's Kopje, 5s.; Orita, 2s.; Orion, 67s. 6d.; Pigg's Peak, 10s. 6d.; Randfontein, 22s.; South African Trust and Finance, 13s. 9d.; Spes Bona, 40s.; St. Augustine's, 4s. 6d.; United African Land, 4s.; Virginia Transvaal, 8s. 6d.; Victoria and Altamira Preference, 1s. 6d.; and Wolhuter, 5s.

In miscellaneous companies there is not much business doing. Broxburn Oil 8½, Young's 18s. 9½, and White Lead 4s. to 5s.

THE REFINING OF GOLD SULPHIDES

Produced by the Precipitation of Gold from Chlorine or Bromine Solution with Sulphurous Acid and Hydrogen Sulphide.*

By WERNER LANGGUTH, Portland, Oregon.

SINCE the introduction of the improved method of precipitating gold from chlorine solution SO_2 and H_2S at the Golden Reward Chlorination Works, Deadwood, S.D., this modern method has been further adopted in the chlorination works of the Portland Consolidated Company at Deadwood, and in those of the Black Hills Milling and Smelting Company at Rapid City, S.D. It has proved practically most successful in the handling of large quantities of gold solution, and constitutes up to date, with Mr. John E. Rothwell's most important improvement—namely, barrel-leaching under hydraulic pressure, the principal progress made in gold chlorination.

The method of refining the gold sulphides which result from this method of precipitation was introduced by me in 1890 at the Golden Reward Works, and in 1892 at those of the Black Hills Company. It has not suffered any changes during the last three years, and is substantially as described below:

Drying and Roasting.

The gold sulphides collected are dried already as far as practicable in the filter-press by passing compressed air through them, and are then transferred (care being taken to avoid loss in handling) to light sheet-iron pans, 20 inches wide, 36 inches long and 4 inches high. Precipitate and filter-cloth are kept separate as much as possible. If dried well in the press, the precipitate is easily detached from the filter-cloth in pretty hard black-brown cakes. The pans, with precipitate and filter-cloth, are now introduced into the muffle of the roasting-furnace. In the latter plant, constructed by the writer in 1892 for the Black Hills Company, the roasting-pans are 2 by 4 feet in area, with sides 4 inches high. The melting furnace is round, and 3 feet in diameter. At these works the dried precipitate and the filter-cloth are transferred to the open cast-iron pans; the muffle is done away with, and the furnace is, in consequence, much simplified. Here the roasting gases escape by the telescope-shaped stack or gas catcher through the roof. The gas catcher is balanced by counterweights. Its lower part is enlarged, and is lowered to about 4 inches from the top of the roasting pans as soon as the furnace has been charged, to allow sufficient free access of air from all sides. If the draft is too strong, the gas catcher is moved higher, and can thus be regulated to get the best condition for roasting. When the muffle or roasting pans are charged, the heat in the furnace is kept gentle at first to drive off the moisture, and is raised little by little to a dark red heat. Sulphur, arsenic, and antimony are oxidized and driven off, and the filter-cloth quickly burns to ashes when detached from the precipitate. The whole treatment of a charge can be conducted within two to three hours. The mass now invariably presents a red brown or yellow appearance, and only a very small percentage of arsenic and sulphur ought to be left. Some care has to be exercised during the whole operation of roasting, not to lose any of the fine precipitate. The draft must be well regulated and stirring almost completely avoided. Steam drying before roasting is unnecessary, and only adds to cost and labour.

Pulverising and Fluxing.

When sufficiently cooled, the roasted sulphides are carefully transferred by means of a hand scoop and brush from the muffle or the pans into the pulverising drum, a cylindrical sheet iron barrel, 3 feet in diameter and 4 feet long, running on trunnions, provided with an air-tight man-hole, and revolved by means of a crank or pulley. Some good-sized cobble stones put into it greatly assist pulverisation. A little borax, soda, and niter is now added, according to the composition of the sulphides. Sometimes the solution from leaching has not been quite clear, and a perceptible amount of alimes (ore) has accumulated with the sulphides in the precipitating tank; or the roasting before chlorination has not been as thorough as it might have been, and considerable quantities of arsenic and antimony have gone into solution with the gold in chlorination, and have been precipitated with SO_2 and H_2S , and not all eliminated in roasting the sulphides. All such circumstances have to be considered, and the necessary fluxes added, to secure a fusible slag of light specific gravity that will render possible the collection of the gold and a clear slag. If the ore treated in the mill is siliceous, the flux will have to be in general an alkaline one, such as soda, potash, &c. If on the contrary, the ore is a basic one, a siliceous flux, such as glass or sand, &c., has to be added. If sulphur, arsenic or antimony has remained, niter or metallic iron may be added. Niter, however, must always be employed with caution, as it occasions violent action during fusion. As the conditions are always varying, the fluxing in each case has to be left to the discretion of the chemist or manipulator. The fluxes are added direct to the sulphides in the pulverising drum, and become well mixed during pulverisation. They should, at all times, be perfectly dry. Moisture in the flux, anywhere, will surely occasion loss during fusion, gold being carried away in the form of fine dust with the steam out of the crucible. Borax glass is to be recommended instead of common crystallised borax. The pulverising drum has proved to be the very best machine for this purpose; since, if it is carefully closed, no dusting and consequent loss are experienced.

Melting.

The gold is now metallic, being reduced by heat in roasting $\text{Au}_2\text{S}_3 + \text{heat} = 2\text{Au} + 3\text{S}$, and $3\text{S} + 6\text{O} = 3\text{SO}_2$. In melting the fluxed and roasted sulphides a crucible of good capacity, and yet easily handled, is of great importance. No. 100, Dixon's plumbago, has proved a suitable size. A little borax glass or slag is first put into the crucible, and the mixture is then charged from the drum into the crucible, each of which is filled to about 2 to 4 inches from the top, and a covering is given of borax glass or rich slag from previous meltings, which will prevent loss by dusting while the contents are fusing. The crucibles are now placed in the furnaces with the assistance of a pair of blocks and tacks and a basket tong. A lid is placed on the crucible, and the steadily increasing temperature soon fuses the contents without any boiling or violent action. After fusion the heat has to be kept at very high temperature for some time to effect a complete collection of the smaller gold globules. The crucible is then taken out and quickly poured into a conical mould of suitable capacity.

* A paper read at the Virginia Beach meeting of the American Institute of Mining Engineers.

Bullion and Slag.

The bullion separates from the slag in conical buttons. Each crucible melt of good sulphides produces from 100 to 150 ounces of bullion, from .800 to .950 fine. Arsenic, antimony, copper, platinum and silver are the principal impurities. The buttons are remelted, as usual, and cast into a bullion mould to be ready for shipment. The resulting slags are still comparatively rich in gold. They are crushed and pulverised, and the gold shots are panned out and added to the next melting. The tailings from this panning are dried and mixed with the slags of assays from the assay office, or other lead containing substances. Metallic iron is added, and the mixture is melted in crucibles which have served for sulphide meltings a good many times already, but are considered not any longer quite as sound as is desired for this most important operation. The resulting lead bullion is expelled, yielding the remainder of the gold. The slags resulting from this second melting are too poor to be rehandled.

Losses.

The losses in refining by this method are almost entirely mechanical, and depend, therefore, to a great extent on the care and skill of the operator. The fine-dust from the roasting as well as the melting furnaces has been assayed at different times after continued operations, but has shown comparatively little gold. There is, of course, some loss by volatilisation in melting, but it is small, and only noticeable when arsenic or antimony is present in large quantity. I have once observed on the iron cover of the melting furnace a white sublimate of arsenic, which showed in some places a beautiful pink colour. Some of this pink sublimate was carefully gathered and assayed, and proved to contain considerable gold. Experience has shown me that this loss only occurs at very high temperatures (above the melting point of gold) and in the presence of a large percentage of volatile metals, such as arsenic and antimony, and can be avoided altogether by careful roasting and fluxing.

Appendix.

The chemical fact that bromine dissolves and extracts gold from ores in itself nothing new; but that several thousand tons of gold ore have been treated with technical as well as financial success, and the gold has been extracted not less easily—in fact, better and more cheaply—with bromine than with chlorine-solution, is surely worth knowing. Last year the Asiatic cholera invaded Europe, and the price of chloride of lime advanced materially in consequence. I then employed bromine instead of chloride of lime and sulphuric acid, and practised barrel bromination at the Black Hills Works in Rapid City, S.D. The cost of bromine was at first 35 cents per lb., but we received it later from the manufacturer on contract for 26 cents per lb.; 1 to 1½ lb. was all that was needed per ton of ore that had been roasted fairly well. On well-roasted ore less than 1 lb. was quite sufficient. The outlay of 26 to 40 cents for bromine per ton of ore, compared very favourably with 80 cents to \$1 for chloride of lime and sulphuric acid; besides which, the handling was more convenient, and the extraction was from 50 cents to \$1 better on ore that was not roasted as well as it ought to have been. We consequently changed altogether over to bromination. Thousands of tons have been brominated since, and I believe we have fully demonstrated, on a large scale, the technical and financial practicability of this branch of metallurgy. The methods of precipitation with the H_2S and SO_2 , and the refining of the gold sulphides, as described above, worked as well on bromine solution as it had done before on chlorine solution, and made no changes of plant necessary.

BOOYSEN LAND AND MINING COMPANY.—An extraordinary general meeting of this company was held on Wednesday, at Winchester House, Old Broad-street, for the purpose of considering the following resolution: "That the Booyesen Land and Mining Company (Limited) be wound-up voluntarily, and that Messrs. Charles Samuel Cornish Watkins and Charles Wallington be appointed liquidators; and that the liquidators be, and are hereby, authorised and directed to distribute the shares and cash received from the Consolidated Gold Fields of South Africa (Limited) amongst the members of this company in such manner as is provided for in the agreement dated November 21, 1894, and made between this company of the one part and the Consolidated Gold Fields of South Africa (Limited) of the other part."—Mr. W. J. Chisholm presided, and, in moving the resolution, said that since the last meeting, when the sale of the property was unanimously agreed to, arrangements had progressed for the transfer to the Gold Fields Deep Company, and were now approaching completion. The directors hoped before the end of the month to receive a cablegram stating that the property had been transferred, and then the time would come for Booyesen shareholders to receive their Gold Fields shares, as arranged, in exchange for Booyesen shares.—The Earl of Denbigh seconded the motion.—In reply to Sir John Morris, the Chairman said that the Consolidated Gold Fields Company acted simply as agents in this country for the Gold Fields Deep Company, which was a South African concern.—The motion was carried unanimously.

NEW GORDON DIAMOND COMPANY (LIMITED).—An extraordinary general meeting of this company was held at Winchester House on Tuesday, Mr. C. C. Bowly presiding.—The Chairman put the following resolution, which was seconded by Mr. D. Francis:—"Resolved: That the capital of the company, now consisting of £560,250, divided into 150,000 priority shares of £1 each, whereof 111,584 are issued; and 410,250 ordinary shares of £1 each, whereof 404,544 are issued, and are all, except 150 on which 2s. 6d. per share is called and unpaid, and 50 on which 2s. per share is called and unpaid, fully paid-up, be reduced to £453,408, divided into 150,000 priority shares of £1 each, and 404,544 ordinary shares of 15s. each, and that such reduction be effected by cancelling the 5706 ordinary shares of £1 each, which have not been taken or agreed to be taken by any person, and by cancelling paid-up capital which has been lost, or is unrepresented by available assets to the extent of 5s. per share on each of the 404,544 issued ordinary shares."—The resolution was unanimously passed.—The Chairman, in reply to a shareholder, stated that the old machinery was still running, and that the new machinery would not be shipped before the end of February, and some time would necessarily be occupied in getting it to the mine and erecting it.

BRITISH BROKEN HILL PROPRIETARY COMPANY.—An extraordinary general meeting of the shareholders of the British Broken Hill Proprietary Company was held on Thursday at Winchester House for the purpose of considering a proposal to confirm the resolution passed at a previous meeting authorising a reduction of the capital of the company.—Mr. H. J. Rouse, who presided, said that since the last meeting of the company a number of letters had been received at the office approving the scheme, while there had been none dissenting from it. There were some who had condemned the proposed writing-off as too drastic, but the counter-proposal—that the capital should remain at over half a million—was certainly without justification, seeing that the property would not fetch so much if it were brought to auction. Since the scheme had been submitted to the shareholders the market had risen for their shares, and this movement could only be attributed to the widespread belief that the change would be beneficial. The Chairman concluded by moving the confirmation of the resolution.—Mr. C. Farbury seconded the motion, which was carried unanimously.

CARMEN MINING CAMP AND THE MEXICAN NORTHERN RAILROAD.—It is announced at Sierra Mojada that the Mexican Northern Railroad is to be extended to the rich mining camp of Carmen on the Rio Grande border, and thence across Presido county, Texas, to Marathon, where connection will be made with the Southern Pacific road. The Mexican Northern has proved one of the most profitable railroad properties in Mexico on account of heavy traffic in silver and lead ores.

WEST AUSTRALIAN GOLD CONCESSIONS.—The warrants for the interim dividend, declared on January 8, of 1s. per share have been posted.

WANTED.

*. Prepaid Advertisements are inserted in this column at the rate of 8d. per line with a minimum charge of 4s.

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THE MANAGERS beg to give notice that at the PUBLIC AUCTION to be held at Batavia, on February 27th, 1895, will be SOLD about

13,000 Picols of Billiton Tin.

A. VAN KAPPEN, Director
M. G. STAAL, Secretary.

The Hague, January, 1895.

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14 Athenian ...	Jan. 27	Jan. 27	Feb. 2	Feb. 9
14 Guelph ...	Jan. 27	Jan. 27	Feb. 2	Feb. 9
14 Mexican ...	Jan. 27	Jan. 27	Feb. 2	Feb. 9

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1 Dunbar Castle (via Canaries) ...	Feb. 1	Feb. 2
Roslin Castle (via Madeira) ...	Feb. 8	Feb. 9
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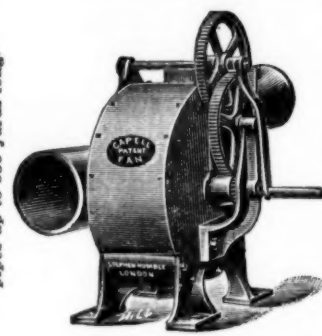
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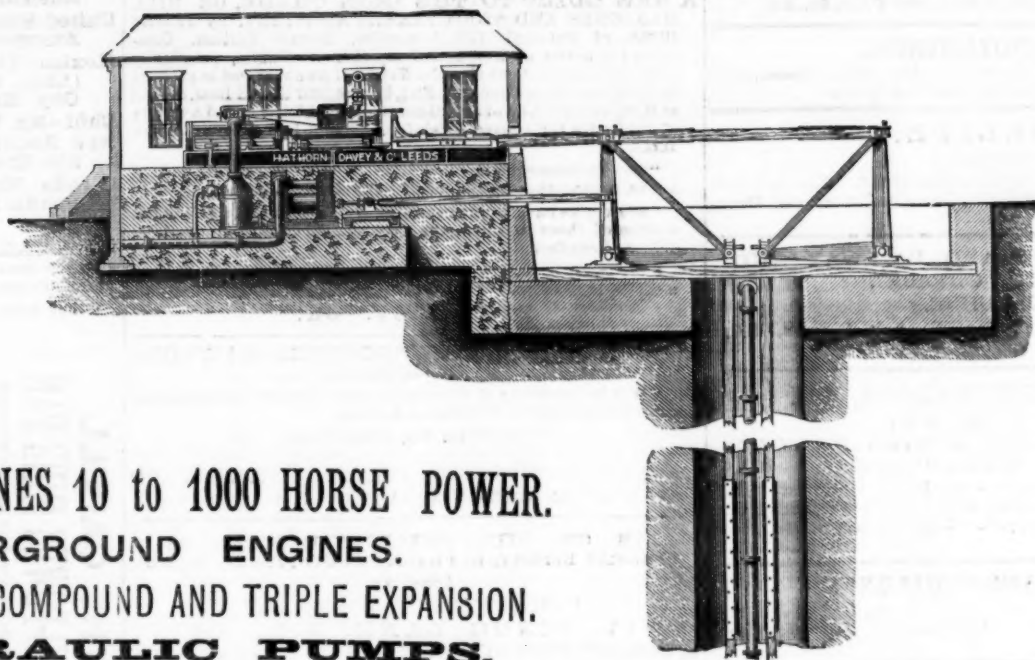
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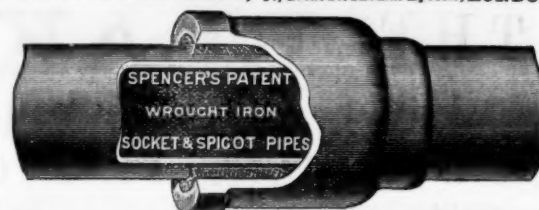
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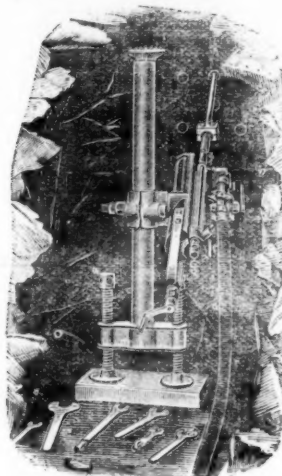
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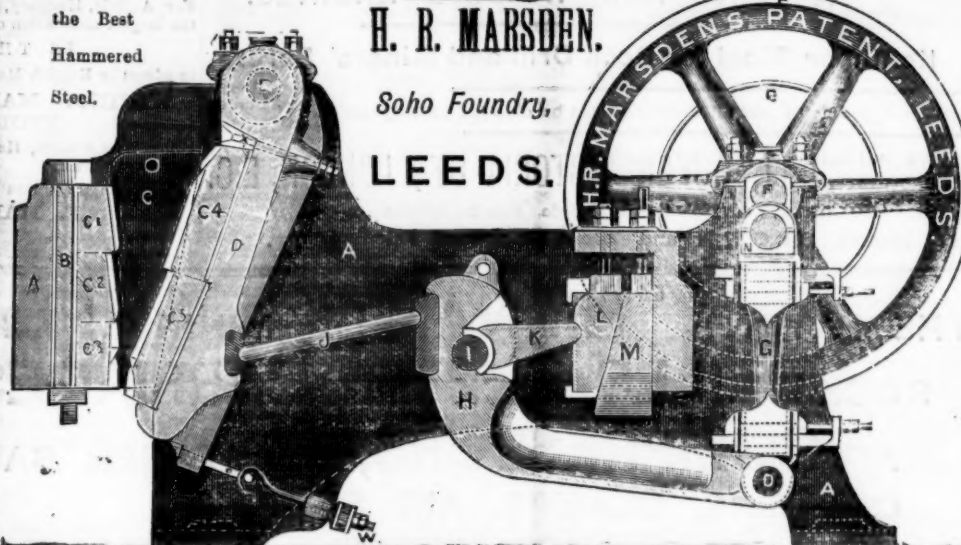
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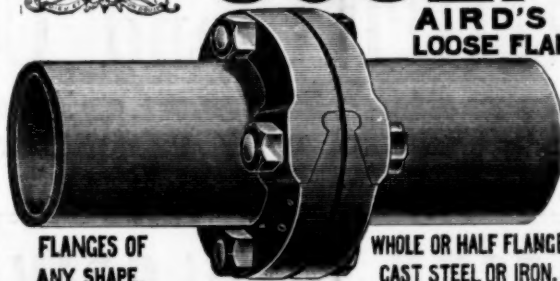
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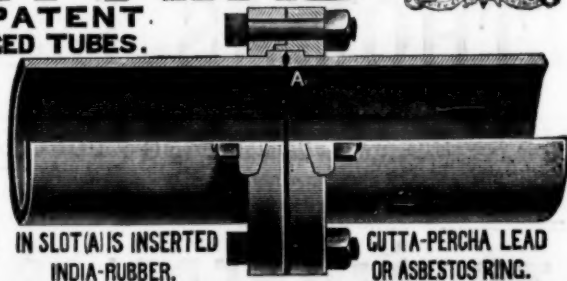


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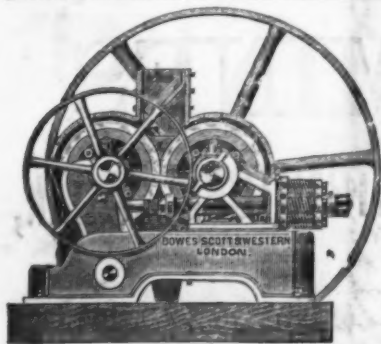
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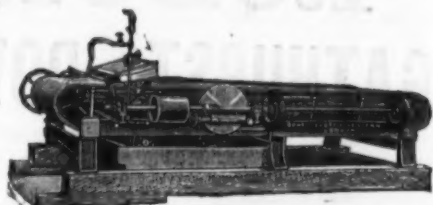
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